

Modification



**Sabine Parish
Sanitary Landfill
Many, Louisiana**

**Permit No. P-0170
Facility No. D-085-1837**

**AI No. 12448
SEPTEMBER 2007**



**10305 Airline Highway
Baton Rouge, Louisiana 70816**



DEPARTMENT OF ENVIRONMENTAL QUALITY

KATHLEEN BABINEAUX BLANCO

GOVERNOR

MIKE D. McDANIEL, Ph.D.

SECRETARY

NOV 07 2007

Certified Mail # 7003 2260 0005 9323 5360

Mr. Pete Chreene
Sabine Parish Sanitary Landfill
P.O. Box 1329
Many, LA 71449

Re: Technically Complete Determination
Solid Waste Permit Major Modification
Sabine Parish Sanitary Landfill
D-085-1837/ P-0170/AI#12448/PER20070001
Sabine Parish

Dear Mr. Chreene:

We are in receipt of the finalized copies of your permit modification dated September 17, 2007, and the additional information package dated October 29, 2007. The additional information submitted separately has been inserted into the final copy of the permit modification. After review of these documents, we have determined that your application is technically complete and prepared for public review.

The Environmental Assistance Division will distribute copies of your application for public review and place public notices in the appropriate newspapers in accordance with LAC 33:VII.513.F.3. Please contact Ms. Soumaya Ghosn at (225) 219-3276 for the date of publication and the dates for the comment period. At the conclusion of the comment period, we will consider all comments and render a permit decision regarding your application.

Please continue to reference your Agency Interest Number (AI# 12448), Facility ID Number (D-085-1837), Permit Number (P-0170) and Tempo Activity Number (PER20070001) on all correspondence pertaining to this matter. If you have any questions, please contact Elizabeth Kashefi at (225)219-3068.

Sincerely,

Bijan Sharafkhani, P.E.
Administrator
Waste Permits Division

ek

c: Mr. Dale L. Steib, P.E.
Sigma Engineers & Constructors, Inc
10305 Airline Highway
Baton Rouge, LA 70816

ENVIRONMENTAL SERVICES

: PO BOX 4313, BATON ROUGE, LA 70821-4313
P:225-219-3181 F:225-219-3309
WWW.DEQ.LOUISIANA.GOV

GRSA-SIGMA

CONSULTANTS AND ENGINEERS

Daniel B. Kais, P.E., *President*
 D. Todd Drummond, P.E., *Vice President*
 Stephen J. Brasuell, P.E., *Director*

Gary W. Cadby, *Chief Executive Officer*
 Corey E. Sullivan, *Vice President*
 Michael N. Dooley, M.B.A., P.E., *Director*

COPY

September 17, 2007

original to IOSW
sm
 copy to SW/G3/Thomas
 AVG

PER 20060001

2007 SEP 19 PM 2 58

LDEQ RECEIPT

Mr. Bijan Sharafkhani, P.E.
 Louisiana Department of Environmental Quality
 Administrator for Office of Environmental Services
 P. O. Box 4314
 Baton Rouge, LA 70821-4314

Subject: Permit Modification
 Sabine Parish Sanitary Landfill
 D-085-1837 / P-0170
 Many, Louisiana
 Agency Interest No. 12448 ✓

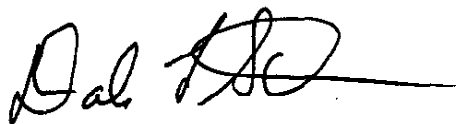
Dear Mr. Sharafkhani:

Sigma Engineers and Constructor's (SEC), on behalf of IESI LA Landfill Corporation, is respectfully submitting six (6) final copies of the modification as requested.

If you have any questions concerning this submittal please contact Mr. Dale Steib, P.E. at (225) 298-0800 or Mr. Mike Friesen (817) 632-4246.

Very truly yours,

SIGMA ENGINEERS AND CONSTRUCTORS, INC.



Dale L. Steib, P.E.

C: Mike Friesen, IESI Corp.
 Pete Chreene, Sabine Parish Landfill
 SEC File # 70306

Attachments

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SEP 20 2007

LDEQ



Modification

Sabine Parish Sanitary Landfill

Permit No. P-0170

Facility No. D-085-1837

AI No. 12448

SEPTEMBER 2007


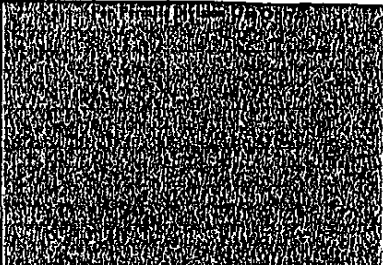
Media Type (check one)

Hazardous Waste ☐ Air ☐
 Solid Waste ☒ Water ☐
 Radiation Licensing ☐

Agency Interest Number: 12448Is this a copy of a previously submitted form? Yes ☐ No ☒

If yes, indicate the original submittal date: _____

If yes, indicate the original permit number: _____

Department of Environmental Quality Permits Division P.O. Box 4313 Baton Rouge, LA 70821-4313 (225) 219-3181		Addendum to Permit Applications per LAC 33:1.1701		
Please Type Or Print	Company Name IESI LA Landfill Corporation		<input type="checkbox"/> Owner <input checked="" type="checkbox"/> Operator	
	Parent Company (If Company Name given above is a division) IESI Corporation			
	Plant name (if any) Sabine Parish Landfill			
	Nearest town Many, LA			

1. Does the company or owner have federal or state environmental permits identical to, or of a similar nature to, the permit for which you are applying in other states? (This requirement applies to all individuals, partnerships, corporations, or other entities who own a controlling interest of 50% or more in your company, or who participate in the environmental management of the facility for an entity applying for the permit or an ownership interest in the permit.)

☒ Permits in Louisiana. List Permit Numbers: Timberlane (LA0106585), LaSalle/Grant (WE-C-93-0156), Tensas (LA0101672)

☒ Permits in other states (list states): See attached

2. Do you owe any outstanding fees or final penalties to the Department? No ☒ Yes ☐
 If yes, please explain. _____

3. Is your company a corporation or limited liability company? No ☐ Yes ☒ If yes, attach a copy of your company's Certificate of Registration and/or Certificate of Good Standing from the Secretary of State.

Certification:

I certify, under provisions in Louisiana and United States law which provide criminal penalties for false statements, that based on information and belief formed after reasonable inquiry, the statements and information contained in this Addendum to the Permit Application, including all attachments thereto are true, accurate, and complete.

Responsible Official

Name	Phil Smith
Title	Vice President - South Central Region
Company	IESI Corporation
Suite, mail drop, or division	200
Street or P.O. Box	2301 Eagle Parkway

City	State	Zip
Fort Worth	TX	76177
Business phone 1-888-734-8678		
Signature of Responsible Official(s) <i>Phil Smith</i>		
Date <i>10/17/06</i>		

RECEIVED

SEP 20 2007

LDEQ

Evidence of Competency

IESI LA Landfill Corporation Solid Waste Management Facilities

IESI LA Landfill Corporation is a wholly owned subsidiary of IESI LA Corporation. IESI LA Corporation is a wholly owned subsidiary of IESI Corporation. IESI Corporation oversees the activities and operations of IESI LA Corporation and IESI LA Landfill Corporation. Therefore, the evidence of competency shall encompass all of IESI Corporation's activities and operations.

IESI Corporation (IESI) was originally incorporated as Sowell/Cummings Waste Management, Inc., on June 17, 1994. The corporate name was amended to Independent Environmental Services, Inc., on July 1, 1994. Company operations began in March 1995. IESI's corporate office is located at 6125 Airport Freeway, Suite 202, Haltom City, Texas 76117(817-314-5800). IESI's Texas District office is located at 3330 North Beach Street, Haltom City, Texas 76117 (817-222-2221).

IESI Corporation and it's wholly owned subsidiaries own IESI LA Landfill Corporation. Therefore, the Evidence of Competency for IESI Corporation will be used for IESI LA Landfill Corporation as follows:

- (A) IESI Corporation and its wholly owned subsidiaries have extensive solid waste operations in Arkansas, New Jersey, New York, Oklahoma, Pennsylvania, and Texas. IESI will provide further information related to the facilities in any other state at the request of the LDEQ.

Name of Site	Location	Type	Dates of Operation	Company	Regulatory Agency
Cherokee Sanitary Landfill	300 Landfill Road, Cherokee Village, AR 72529	Municipal Solid Waste and C&D Landfill	10/98 to present	IESI AR Landfill Corporation	State Of Arkansas, Department of Environmental Quality, P.O. Box 8913, Little Rock, AR 72219-8913
IESI Heber Springs Transfer Station	4 th and Oak St., Heber Springs, AR, 72543	Municipal Solid Waste Transfer Station	6/99 to present	IESI AR Corporation	State Of Arkansas, Department of Environmental Quality, P.O. Box 8913, Little Rock, AR 72219-8913
IESI AR - Midway	10 CR 510, Midway, AR 76251	Municipal Solid Waste Transfer Station	6/00 to present	IESI AR Corporation	State Of Arkansas, Department of Environmental Quality, P.O. Box 8913, Little Rock, AR 72219-8913

Name of Site	Location	Type	Dates of Operation	Company	Regulatory Agency
IESI Blue Ridge Landfill	3747 White Church Road Chambersburg, PA, 17201	Municipal Solid Waste Landfill	6/99 to present	IESI PA Blue Ridge Landfill Corporation	Pennsylvania Department of Environmental Protection, NE Regional Office, 2 Public Square, Wilkes-Barre, PA 18711-0790
IESI Bethlehem Landfill	2335 Applebutter Road, Bethlehem, PA 18015	Municipal Solid Waste and Construction and Demolition Landfill	6/99 to present	IESI PA Bethlehem Landfill Corporation	Pennsylvania Department of Environmental Protection, NE Regional Office, 2 Public Square, Wilkes-Barre, PA 18711-0790
Chickasha Transfer Station	402 N. Genevieve, Chickasha, OK 73023	Municipal Solid Waste Transfer Station	7/99 to present	IESI TX Landfill LP	Oklahoma Department of Environmental Quality, P.O. Box 1677, Oklahoma City, OK 73101-1677
IESI 50 th St. Transfer Station	110-120 50 th Street, Brooklyn, NY 11232	Municipal Solid Waste Transfer Station	6/99 to present	IESI NY Corporation	New York State Department of Environmental Conservation, 1 Hunter's Point Plaza, 47-40 21 st St., Long Island City, NY 11101-5407
IESI Varick St. C&D Transfer Station	548 Varick Street, Brooklyn, NY 11222	Construction and Demolition Transfer Station	11/98 to present	IESI NY Corporation	New York State Department of Environmental Conservation, 1 Hunter's Point Plaza, 47-40 21 st St., Long Island City, NY 11101-5407

Name of Site	Location	Type	Dates of Operation	Company	Regulatory Agency
IESI Casanova St. Transfer Station	325-327 Casanova St., Bronx, NY 10474	Municipal Solid Waste Transfer Station	2/98 to present	IESI NY Corporation	New York State Department of Environmental Conservation, 1 Hunter's Point Plaza, 47-40 21 st St., Long Island City, NY 11101-5407
IESI Court St. Transfer Station	577 Court Street	Municipal Solid Waste Transfer Station	6/99 to present	IESI NY Corporation	New York State Department of Environmental Conservation, 1 Hunter's Point Plaza, 47-40 21 st St., Long Island City, NY 11101-5407
IESI - Spartan Asbestos Transfer Station	110 Fifth Street, Brooklyn, NY 11231	Construction and Demolition Transfer Station	9/98 to present	IESI NY Corporation	New York State Department of Environmental Conservation, Region 2, 1 Hunter's Point Plaza, 47-40 21 st St., Long Island City, NY 11101-5407
IESI - La Cavalla Transfer Station	2630 Park Avenue, Bronx, NY 10451	Municipal Solid Waste Transfer Station	7/98 to present	IESI NY Corporation	New York State Department of Environmental Conservation, Region 2, 1 Hunter's Point Plaza, 47-40 21 st St., Long Island City, NY 11101-5407
IESI New Jersey Recycling	5 Linden Avenue E, Jersey City, NJ 01303	Recycling Center	7/98 to present	IESI NJ Recycling Corporation	New Jersey Environmental Protection Bureau, 401 E. State St., Trenton, NJ 08625

Name of Site	Location	Type	Dates of Operation	Company	Regulatory Agency
Westside Transfer Station	7930 W. Bankhead Highway, Douglasville, Douglas County, Georgia 30134	Municipal Solid Waste Transfer Station	8/99-12/99	IESI TN Corporation	Georgia Department of Natural Resources, 205 Butler St. S.E., Floyd Towers, East, Suite 1462, Atlanta GA, 30334
Sabine Parish Landfill	955 Sabine Landfill Road, Highway 171 North, Many, Sabine Parish, Louisiana 71449	Municipal Solid Waste Landfill	11/00 to present	IESI LA Landfill Corporation	Louisiana Department of Environmental Quality, P.O. Box 82135, Baton Rouge, LA 70884
LaSalle Grant Landfill	Highway 127 Jena, LaSalle Parish, LA 71342	Municipal Solid Waste Landfill	11/00 to present	IESI LA Landfill Corporation	Louisiana Department of Environmental Quality, P.O. Box 82135, Baton Rouge, LA 70884
Natchitoches Parish Pick-Up Station	4597 Hwy 1, Natchitoches Parish, LA 71457	Municipal Solid Waste Pick Up Station	11/00 to present	IESI LA Corporation	Louisiana Department of Environmental Quality, P.O. Box 82135, Baton Rouge, LA 70884
Alexandria Transfer & Material Processing Facility	8285 Highway 165 South, Alexandria, Rapides Parish, LA 71315	Municipal Solid Waste Transfer Station	11/00 to present	IESI LA Corporation	Louisiana Department of Environmental Quality, P.O. Box 82135, Baton Rouge, LA 70884
Tensas Parish Landfill	U.S. 65 South - Walker Road, St. Joseph, Tensas Parish, LA 71357	Municipal Solid Waste Landfill	6/01 to present	IESI LA Landfill Corporation	Louisiana Department of Environmental Quality, P.O. Box 82135, Baton Rouge, LA 70884

Name of Site	Location	Type	Dates of Operation	Company	Regulatory Agency
Timberline Landfill	½ mile west of U.S Highway 165, and 1.6 miles south of Pawnee Road, 3 miles north of Oakdale, Allen Parish, Louisiana	Municipal Solid Waste Landfill	8/02 to present	IESI LA Landfill Corporation	Louisiana Department of Environmental Quality, P.O. Box 82135, Baton Rouge, LA 70884
Bristow Transfer Station	West 241 st Street, ½ mile east of the intersection of State Hwy. 48, Bristow, Creek County, OK	Municipal Solid Waste Transfer Station	8/02 to present	IESI OK Corporation	Oklahoma Department of Environmental Quality, P.O. Box 1677, Oklahoma City, OK 73101-1677
Canadian County Landfill	SW 29th Street, 1 mile west of intersection of SW 29 and OK County Road 81; El Reno, Canadian County, Oklahoma	Municipal Solid Waste Landfill	8/02 to present	IESI OK Corporation	Oklahoma Department of Environmental Quality, P.O. Box 1677, Oklahoma City, OK 73101-1677
Watonga Transfer Station	US Hwy 281 , 1/2 mile south OK CR 820; Watonga, Blaine County, Oklahoma	Municipal Solid Waste Transfer Station	8/02 to present	IESI OK Corporation	Oklahoma Department of Environmental Quality, P.O. Box 1677, Oklahoma City, OK 73101-1677
Eakly Transfer Station	1.5 miles east of Oklahoma State Highway 58 and 2.5 miles southeast of Eakly, Caddo County, Oklahoma on State Hwy 152.	Municipal Solid Waste Transfer Station	8/02 to present	IESI OK Corporation	Oklahoma Department of Environmental Quality, P.O. Box 1677, Oklahoma City, OK 73101-1677

Name of Site	Location	Type	Dates of Operation	Company	Regulatory Agency
Hobart Transfer Station	523 S. Broadway, Hobart, Kiowa County, Oklahoma	Municipal Solid Waste Transfer Station	8/02 to present	IESI OK Corporation	Oklahoma Department of Environmental Quality, P.O. Box 1677, Oklahoma City, OK 73101-1677
Frederick Landfill	East 1780 Road, approximately 1 mile west of U. S. Highway 183 and approximately 3 miles north of the City of Frederick, Tillman County, Oklahoma.	Municipal Solid Waste Landfill	8/02 to present	IESI OK Corporation	Oklahoma Department of Environmental Quality, P.O. Box 1677, Oklahoma City, OK 73101-1677
Waurika Transfer Station	¼ mile off US Hwy. 81, one (1) mile north of Waurika, Jefferson County, Oklahoma	Municipal Solid Waste Transfer Station	8/02 to present	IESI OK Corporation	Oklahoma Department of Environmental Quality, P.O. Box 1677, Oklahoma City, OK 73101-1677
Center Point Landfill	Tower Road, 3 1/2 miles North of US Highway 62 and Tower Road; Lincoln County, Oklahoma	Municipal Solid Waste Landfill	8/02 to present	IESI OK Corporation	Oklahoma Department of Environmental Quality, P.O. Box 1677, Oklahoma City, OK 73101-1677
Fort Worth C&D Landfill	4144 Dick Price Road, Fort Worth, TX 76060	Construction and Demolition Landfill	7/97 to present	IESI TX Landfill LP	Texas Natural Resource Conservation Commission, 12015 Park 35N Circle, Austin TX, 78753

Name of Site	Location	Type	Dates of Operation	Company	Regulatory Agency
Buffalo Creek Landfill	Smith and Johnson Road, Iowa Park, TX, 76367	Municipal Solid Waste Transfer Station	7/99 to present	IESI TX Landfill LP	Texas Natural Resource Conservation Commission, 12015 Park 35N Circle, Austin TX, 78753
Travis County C&D Landfill	9600 FM 812, Austin, TX, 78719	Construction and Demolition Landfill	6/00 to present	IESI TX Landfill LP	Texas Natural Resource Conservation Commission, 12015 Park 35N Circle, Austin TX, 78753
IESI East Texas Regional Landfill	5155 FM 2867, Henderson, TX, 75653	Municipal Solid Waste Landfill	8/99 to present	IESI TX Corporation	Texas Natural Resource Conservation Commission, 12015 Park 35N Circle, Austin TX, 78753
IESI Iowa Park Transfer Station	1201 W Smith Rd, Iowa Park, TX, 76367	Municipal Solid Waste Transfer Station	7/99 to present	IESI TX Landfill LP	Texas Natural Resource Conservation Commission, 12015 Park 35N Circle, Austin TX, 78753
IESI Bowie Transfer Station	S. Gallia Road, Bowie, TX, 76230	Municipal Solid Waste Transfer Station	7/99 to present	IESI TX Landfill LP	Texas Natural Resource Conservation Commission, 12015 Park 35N Circle, Austin TX, 78753
Minnis Drive Transfer Station	Int. Minnis Dr and Hwy 121, Haltom City, TX, 76111	Municipal Solid Waste Transfer Station	9/00 to present	IESI TX Corporation	Texas Natural Resource Conservation Commission, 12015 Park 35N Circle, Austin TX, 78753

Name of Site	Location	Type	Dates of Operation	Company	Regulatory Agency
City of Vernon Transfer Station	11053 County Road 97 North, Vernon, TX, 76384	Municipal Solid Waste Transfer Station	8/99	IESI TX Corporation	Texas Natural Resource Conservation Commission, 12015 Park 35N Circle, Austin TX, 78753
Archer City Transfer Station	S. Pear Street, Archer City, Texas, 76351	Municipal Solid Waste Transfer Station	8/99- 8/99	IESI TX Landfill LP	Texas Natural Resource Conservation Commission, 12015 Park 35N Circle, Austin TX, 78753
IESI Blanco County Transfer Station	2021 Highway 21 South, Johnson City, TX 78606	Municipal Solid Waste Transfer Station	5/97	IESI TX Corporation	Texas Natural Resource Conservation Commission, 12015 Park 35N Circle, Austin TX, 78753
IESI Lake Country/Min gus Transfer Station	2700 McAlister Road, Mingus, TX, 76453	Municipal Solid Waste Transfer Station	6/97 to present	IESI TX Corporation	Texas Natural Resource Conservation Commission, 12015 Park 35N Circle, Austin TX, 78753

IESI Corporation and its wholly owned subsidiaries have extensive solid waste operations in Arkansas, New Jersey, New York, Oklahoma, Louisiana, and Pennsylvania. IESI will provide further information related to the facilities in the other states listed above, at the request of the TNRCC.

- (C) The applicant has a prior site operating record in the State of Texas as outlined in Section A.
- (D) Names or the principals and supervisors of the applicant's organization, with previous affiliations with other organizations engaged in solid waste activities.

IESI has assembled a talented team with experience in municipal solid waste disposal including but not limited to the following personnel:

Charles (Mickey) F. Flood
 IESI Chief Executive Officer and President
 36 years of experience in the solid waste industry with IESI, Waste Management Inc., Laidlaw Waste Systems, and GSX Corporation

Thomas (Tom) L. Brown
IESI Vice President and Chief Operation Officer
24 years of experience in the solid waste industry with IESI and Waste Management Inc.

Christopher (Chris) V. Della Pietra
IESI Vice President, General Counsel, and Secretary
8 years of experience in general law practices in New York and New Jersey

Thomas (Tom) Cowee
IESI Vice President and Chief Financial Officer
22 years of experience in the solid waste industry with IESI, USA Waste Services, and Waste Management Inc.

Paul L. (Larry) McGee
IESI Senior Vice President and Chief Development Officer
20 years of experience in the solid waste industry with IESI, Waste Management Inc., and Browning Ferris.

Eugene Orcutt
IESI Director of Landfill Management
22 years of experience in the solid waste industry with IESI, Waste Management Inc., Lawrence Erie Stone, Highway Equipment Company, and Beckwith Machine Company.

Gordon (Jeff) D. Peckham
IESI Vice President South Region
25 years of experience in the solid waste industry with IESI, and Waste Management.

Joseph A. Vieceli
Regional Environmental Manager
11 years of experience in the solid waste industry with Waste Management, Inc., Emcon, and Weaver Boos & Gordon.

IESI and its development team possess extensive experience in collection, transfer, and disposal of municipal solid waste.

(E). Landfilling and earthmoving experience along with type of equipment dedicated to the site operation.

The aforementioned staff in Section D will provide oversight and training for employees at each facility. Individual experience of on-site operators will be provided to TNRCC officials upon request.

The type of equipment used for site operation is depicted in the Site Operating Plan in the Equipment Section for this facility. Additional or different units of equipment may be provided as necessary to enhance operational efficiency. The equipment requirements for this site were based on an anticipated solid waste volume and field conditions. Other types of equipment may be substituted for this equipment on an as-needed basis or based on actual field conditions.

United States of America State of Louisiana



As Secretary of State, Jay Dardenne, I do hereby Certify that

IESI LA LANDFILL CORPORATION

A corporation domiciled in WILMINGTON, DELAWARE,

Filed charter and qualified to do business in this State on
October 25, 2000,

I further certify that the records of this Office indicate
the corporation has paid all fees due the Secretary of
State, and so far as the Office of the Secretary of State is
concerned is in good standing and is authorized to do
business in this State.

I further certify that this Certificate is not intended to
reflect the financial condition of this corporation since
this information is not available from the records of this
Office.

In testimony whereof, I have hereunto set
My hand and caused the Seal of my Office
To be affixed at the City of Baton Rouge on,

March 6, 2007

A handwritten signature in black ink, appearing to read "Jay Dardenne".

Secretary of State
35000671F



Certificate ID: 20070306007537

To validate this certificate, visit the following web site,
go to Commercial Division, Validate Certificate, then
follow the instructions displayed.

www.sos.louisiana.gov

United States of America State of Louisiana



As Secretary of State, Jay Dardenne, I do hereby Certify that

IESI LA CORPORATION

A corporation domiciled in WILMINGTON, DELAWARE,

Filed charter and qualified to do business in this State on
October 25, 2000,

I further certify that the records of this Office indicate
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concerned is in good standing and is authorized to do
business in this State.

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this information is not available from the records of this
Office.

In testimony whereof, I have hereunto set
My hand and caused the Seal of my Office
To be affixed at the City of Baton Rouge on,

March 6, 2007

Secretary of State
35000672F



Certificate ID: 20070306007538

To validate this certificate, visit the following web site,
go to Commercial Division, Validate Certificate, then
follow the instructions displayed.

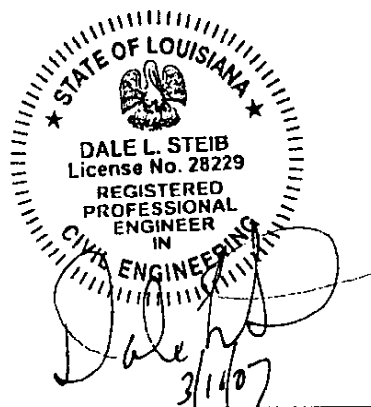
www.sos.louisiana.gov

LAC 33:VII.521.F FACILITY PLANS AND SPECIFICATIONS

521.F.1 Certification-The person who prepared the permit application must provide the following certification:

"I certify under penalty of law that I have personally examined and I am familiar with the information submitted in this permit application and that the facility as described in this permit application meets the requirements of the Solid Waste Rules and Regulations. I am aware that there are significant penalties for knowingly submitting false information, including the possibility of fine and imprisonment."

RESPONSE: I certify under penalty of law that I have personally examined and I am familiar with the information submitted in this permit application and that the facility as described in this permit application meets the requirements of the Solid Waste Rules and Regulations. I am aware that there are significant penalties for knowingly submitting false information, including the possibility of fine and imprisonment.



Dale L. Steib, P. E.
Louisiana Registration No. 28229

521.F.3. The following information on plans and specifications is required for Type I, II, and III landfills:

521.F.3.a. Approximate dimensions of daily fill and cover; and

RESPONSE: Incoming waste placement will consist of daily working faces measuring approximately 50 ft wide by 150 ft long by 3 feet high based upon an average operating volume of 500 tons per day (Reference Exhibit No. 7A). At the end of each working day, daily cover will be applied to the working face. Daily cover at the Sabine Parish Landfill will consist of the following:

1. An alternate daily cover system consisting of tarps, soil, hydro mulching, posi-shell or another approved material will be used as daily cover, and
2. Every seventh day, or more frequently if deemed necessary by the landfill manager, 6 inches of soil will be placed as daily cover over the entire area that has been covered by tarps during that period.

Another application of hydro mulch, or another LDEQ approved material or 6" of soil will be applied to areas that will not receive waste for more than seven days.

The purpose of using tarps and hydro mulching for daily cover is to minimize the amount of daily cover soil that is placed—needed for covering the waste in the landfill. To minimize the number of tarps, if used, required for daily cover, then the daily working faces will be stacked and overlapped. By removing and reusing the tarps from a previous working face and continuing landfill operations, the area covered with tarps can be limited.

521.F.3.b. The type of cover material and its source for daily, interim, and final cover. Calculations shall be submitted demonstrating that an adequate volume of material is available for daily, interim, and final cover.

RESPONSE: The earthen cover materials will be on site soils. Based on subsurface conditions encountered during the site investigation, two soil zones will be encountered during landfill construction. Zone I consists of clay and sandy clay that is suitable for use as liner material, daily cover, interim cover, interim compacted cover, and final cover. Zone II consists of clayey and silty sand that is suitable for use as daily cover.

DAILY COVER

Daily cover will may consist of tarps (see response to LAC 33:VII.521.F.3.a.), or 6 inches of site soils or an alternate daily cover such as hydro mulch or posi-shell. Cover soil will consist of soils which have not previously been in contact with solid waste. Care will be taken to avoid mixing the landfilled waste with the cover soil.

Alternate forms of daily cover may be used including but not limited to hydro mulching such as "waste-Cover" and "Posi-Shell". The specifications, MSDS sheet and operational plans for these hydro mulching products are given in Appendix 12. These materials satisfy all the requirements specified in accordance with LAC 711.B.2.a as reflected in the manufacturers published documentation. Another application of hydro mulch, or another LDEQ approved material or 6" of soil will be applied to areas that will not receive waste for more than seven days.

The approved alternate daily cover manufacturers' operation plan and/or application procedures will be followed.

WEEKLY COVER

At least weekly, a cover consisting of 6 inches of site soils (LAC 33:VII.711.B.2.b) will be applied. Cover soil will consist of soils which have not previously been in contact with solid waste. Care will be taken to avoid mixing the landfilled waste with the cover soil.

INTERIM COVER

Interim cover will be applied to landfill areas that will not receive additional waste placement within 60 days. Interim cover should be applied within 48 hours of the last receipt of solid waste on the operational face. Interim cover will consist of an additional 6 inches of soil placed over the daily cover (12 inches total), thus meeting or exceeding the requirements of LAC 33:VII.711.B.2.b. Interim cover may be removed prior to additional waste placement.

INTERIM COMPACTED COVER

Interim compacted cover will be applied to areas which discharge directly to the external ditch system. Interim compacted cover will consist of a minimum of 24 inches of compacted soil placed over the waste material. Interim compacted cover should be applied within 48 hours of the last receipt of solid waste on the operational face. Compaction will occur by repeated passage of landfill equipment over the cover soil. Interim compacted cover may be removed prior to additional waste placement or installation of the multi-layer final cover system.

FINAL COVER

Final cover is discussed in Response to LAC 33:W1.5211.2.a. There is adequate material on site to provide the required volume. See Response to LAC 33:VII.521.F.2.c.

- 521.F. 4. The following information on plans and specifications for the prevention of groundwater contamination must be submitted for Type I and H facilities:**

- 521.F.4.a. Representative cross-sections and geologic cross-sections showing**

LAC 33:VII.521.H. FACILITY OPERATIONAL PLANS

521.H.1. The following information operational plans is required for all facilities:

521.H.1a. Types of waste (including chemical, physical, and biological characteristics of industrial wastes generated on-site), maximum quantities of wastes per year, and sources of waste to be processed or disposed of at the facility;

RESPONSE: The Sabine Parish Landfill will be used for disposal of all residential, commercial, and industrial solid waste pursuant to the definitions and restrictions established by LAC 33:VII.115, and LAC 33:VII.711.D.1.

Waste types which will be disposed of in the Sabine Landfill include:

- 1) Trash consisting of nonputrescible refuse including furniture, wood goods, and metal goods;
- 2) Garbage including animal and vegetable matter from the handling, preparation, cooking and serving of foods;
- 3) Residential solid waste including any solid waste (garbage, trash and sludges from septic tanks and wastewater treatment facilities) derived from households (single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas).
- 4) Water treatment plant sludge;
- 5) Domestic wastewater treatment sludge;
- 6) Air pollution control facility sludge;
- 7) Infectious waste from hospitals in accordance, with the Department of Health and Human Resources regulations;
- 8) Nonhazardous industrial solid waste produced in the course of and resulting from any industrial, manufacturing, or mining process which is not a hazardous waste regulated under the Louisiana Hazardous Waste Regulations or under federal law, waste which is not subject to regulation under the Office of Conservation's is not subject to regulation under the Office of Conservations Statewide Order No. 29-B, or waste which is not radioactive waste defined by the regulations of the Nuclear Division of LDEQ;
- 9) Agricultural waste resulting from the production or processing of agricultural products including manures, prunings, and crop residues;
- 10) Construction/Demolition Debris including but not limited to metal, concrete, brick, asphalt, roofing materials, or lumber from a construction or demolition project;

- 11) Asbestos
- 12) Wood waste including wood residue, cutoffs, wood chips, sawdust, wood shavings, bark, earthen material, wood refuse, wood-fired boiler ash, and similar types of waste which are typically generated by sawmills, plywood mills, and wood yards associated with the lumber and paper industry;
- 13) Nonhazardous industrial solid waste and nonhazardous petroleum contaminated media and debris generated by underground storage tank corrective action;
- 14) Incinerator ash;
- 15) Processed tires; and
- 16) Other solid wastes and other discarded material including solid, semi-solid or contained gaseous material at standard temperature and pressure, resulting from industrial, commercial mining, and agricultural operations and from community activities which are not prohibited by LAC 33:VII.711.D.1.
- 17) Liquid wastes which must be solidified prior to disposal will be accepted. The quality assurance/quality control program describing the solidification procedures is presented as Appendix 14. Containers holding liquids will not be placed in the landfill unless the requirements of LAC 33:VII.711.D.1.g.ii have been met.

Non-hazardous industrial waste is received at this site. Non-hazardous liquid or semi-solid sludges acceptable for solidification are also received. Solidification is accomplished by mixing with fly ash, lime, kiln dust, or other suitable solidification materials.

The receipt of regulated hazardous waste and regulated PCB waste shall be strictly prohibited. To detect and prevent entry of these wastes, the "Solid Waste Analysis and Management Plan," presented in Appendix 14, sets forth methods as precautions and controls to determine record and monitor incoming wastes. The program includes random inspections of incoming loads to detect and prevent disposal of waste excluded by the facility permit.

In accordance with LAC 711.D.1.f, the grazing of domestic livestock shall not be allowed on operating areas.

In accordance with LAC 711.D.1.i, no solid waste shall be deposited in standing water.

The Sabine Landfill is estimated to receive an average of approximately 500 tons/day or approximately 143,000 tons/year of waste. Maximum waste receipts, based on the site design and operation, is estimated to be approximately 1,000 tons/day or approximately 286,000 ton/year. The service area for the Sabine Parish

Landfill will be unlimited.

521.H.1.b.

Waste-handling procedures from entry to final disposition, which could include shipment of recovered materials to a user;

RESPONSE:

Sabine Parish Landfill uses the SWAMP (See Appendix 14) to manage waste received at the Sabine Landfill. Random inspections, procedures to analyze and manage the movement of the waste received at the site, and methods to be used in determining the identity of each waste received at the site are described in this plan. A system of management controls is provided to ensure that only permitted waste, including solid waste from residential, commercial, and industrial sources pursuant to the definitions and restrictions established by LAC 33:VII.115 and LAC 33:VII.711.D.1 will be disposed of at the landfill.

METHODS OF CONTROLLING INCOMING WASTE

There are several methods of controlling incoming waste to prevent inadvertent receipt of waste materials which would violate landfill permits or management policies. In addition, rules for waste disposal and prohibited wastes are prominently displayed on sign(s) at the site entrance.

One method of controlling incoming waste is provided by the scale ~~master~~attendant at the landfill entrance. The scale ~~master~~attendant attendant has been instructed on what to look for in incoming waste loads that may indicate a shipment of prohibited waste material. As each waste vehicle arrives at the site entrance, the scale ~~master~~attendant visually observes the waste vehicle to check if there are any obvious signs that the waste load is a prohibited waste. If the scale ~~master~~attendant suspects that a shipment contains prohibited waste, the shipment will be directed to the sampling area for further review or it will not be accepted. If the scale ~~master~~attendant suspects that a shipment contains prohibited waste, LDEQ and the district manager will be notified.

The scale ~~master~~attendant will direct shipments of nonhazardous industrial and other special wastes, which have appropriate manifest documentation to the inspection area for inspection and/or sampling of the waste shipment. Shipments of nonhazardous industrial and other special wastes without appropriate manifest documentation will not be accepted at the site. All other wastes will be directed to the working face of the landfill.

At the inspection area the QA/QC ~~Technician will conducting and documenting the inspection may~~ obtain waste samples and perform analyses as indicated in the SWAMP. The QA/QC technician, performing the inspection and/or testing in the inspection area, has been instructed as to the general appearance and characteristics of many types of prohibited waste. If a prohibited waste is observed by

the QA/QC technician the waste will not be accepted for disposal, and LDEQ and the district landfill manager will be notified.

Another method of controlling incoming waste occurs at the working face of the landfill. Landfill personnel are instructed as to the general appearance and characteristics of many types of prohibited wastes. As waste unloading operations are observed and incoming wastes are spread and compacted, landfill personnel are alert to the potential presence of prohibited waste. If prohibited waste is observed or suspected, landfill personnel are instructed to isolate the material, if possible, and prevent its inclusion into the landfill. If the material were inadvertently mixed with waste on the working face of the landfill, procedures would be implemented to exhume the prohibited material from the landfill for safe disposal at a facility permitted to receive that specific type of waste.

Once a suspected prohibited waste has been isolated and secured, the landfill foreman, the district landfill manager, and LDEQ ~~must~~ may be notified to determine the proper regulatory and environmentally safe course of action.

RECEIPT OF UNAUTHORIZED WASTES

If prohibited waste or suspected prohibited waste arrives at the active disposal area, the following procedures will be followed:

- 1) Attempt to stop the removal of prohibited waste from the haul vehicle, accompany the haul vehicle to the gatehouse, and report all details of the incident to the landfill foreman and the district manager. If the suspected waste is not prohibited waste, allow its disposal.
- 2) If prohibited waste is received at the landfill, attempt to identify the hauler.
- 3) Take all necessary precautions to prevent landfilling the prohibited waste.
- 4) Notify the district landfill manager and LDEQ ~~for recommended actions and follow up with a status of their accomplishment.~~

WEIGHING AND MEASURING INCOMING WASTE

One scale, with electronic output compatible with Sabine Parish Landfill's account control system, will be provided at the scale house. The scale house will also be provided with one fee-collection station.

VEHICLE TRAFFIC CONTROL AND UNLOADING

Landfill access is provided from U.S. 171 through a gravel access road which is constructed as an all-weather road. Traffic to the landfill is controlled by a scale master attendant. The scale master attendant will restrict access of unauthorized vehicles to the landfill and will direct these vehicles to the appropriate area of the site.

Onsite roads will be used to access the working face within the landfill. These roads will be covered with materials such as crushed concrete rock, limestone, or bricks. Landfill equipment will use the same onsite roads as the waste delivery vehicles. Vehicle turnouts of adequate size will be provided to facilitate unloading operations. Access to the working face, during wet-weather conditions, will be maintained by grading out ruts or by applying additional road base material to the onsite access roads.

The site will be designated to operate as a multi-level, modified area fill landfill. This method of operation will employ a continuously moving stairstep method of landfill operations. Landfilling will occur in above-grade and below-grade areas. Each level will have temporary access roads and temporary drainage control dikes and/or ditches. Each day's landfilling operations generally will occur at a particular level or levels, which will be selected by the landfill foreman based on weather conditions, ease of access, and availability of landfill space.

The advantages to the stairstep landfilling method are as follow:

- 1) Daily working face location can be selected for greatest ease of operation for that day's weather conditions, thus minimizing the adverse effects of high winds, rain, etc.
- 2) Final closure of portions of the site can be accomplished throughout the active life of the landfill. Final cover re-vegetation and long-term drainage systems installation can be accomplished concurrently with daily landfill operation. This methodology also minimizes rainfall percolation into the completed portions of the landfill.

WASTE PLACEMENT

Solid waste placement at the Sabine Landfill will be controlled by placing waste only in locations specified by the landfill foreman. Waste placement control will also be used to confine the working face of the landfill to the minimum size, allowing safe and efficient landfilling operations.

Restricting waste placement to designated locations will be accomplished by portable signs with directional arrows and potable traffic barricades. The signs and barricades will be placed conspicuously along the access road to the working face of the landfill or to other designated waste placement areas which may be established. The scale master attendant will be familiar with the location of the authorized waste placement area(s) and will direct landfill patrons to the proper area.

TRAFFIC AT THE WORKING FACE

Operations at the working face will be conducted to encourage the

efficient movement of transportation vehicles to and from the working face expedite the unloading of solid waste. The approach to the working face will be maintained in an accessible condition to enable two or more vehicles to unload safely side by side. A vehicle turnaround area, large enough to enable vehicles to arrive and turn around safely, will be provided adjacent to the unloading area. The vehicles will back up to a vacant area near the working face to unload.

When unloading is complete, the transportation vehicle will immediately leave the working face. Landfill personnel will direct traffic, as necessary, to expedite safe movement of vehicles. There may be several working face areas at the landfill due to landfiling in the above-grade or below-grade portions of the landfill during the same period. Solid waste at the other working face areas will be secured by daily cover.

One or two pieces of landfill equipment, usually bulldozers or landfill compactors, will be operating at the working face during the periods of operation. This equipment will spread and compact the solid waste into the working face in a continual operation immediately after receipt of each load. This occurs immediately after receipt of each load. This operation will minimize the amount of time that uncompacted solid waste will be exposed to weather conditions and will prevent escape of windblown materials. During the spreading operation, distribution of materials evenly across the working face will be attempted, particularly those materials that are difficult to landfill because of bulk, shape, or other factors. The continued operation of the landfill equipment is required to achieve the greatest degree of compaction of the solid waste and maximum utilization of air space.

The working face of the landfill will be formed into a cell of compacted solid waste at the end of each day's operation. The daily working face will measure approximately 50 feet wide by 150 feet long by 3 feet high (based on 150 tons/day of waste receipts. No salvage will be permitted at the landfill. Salvage operations at the working face would cause unsafe operation conditions and disruptions to landfill operations.

After the final load of solid waste has been received, spread, and compacted each day, preparations will begin for application of daily cover traps. First, final shaping of the working face is performed which includes leveling the top and shaping the sides of the working face to conform to previous or future landfiling operations.

Once final shaping is complete, tarps will be spread over the working face. The tarps will be removed prior to commencing landfiling operations the next day. In order to minimize the number of tarps required to cover the exposed waste, the daily cells will be stacked and overlapped. Every seventh day, or more frequently if deemed

necessary by the landfill manager, the working face will be covered with 6 inches of soil. Cover soil will be applied until all solid waste has been adequately covered with a minimum of 6 inches of soil.

521.H.1.c.

Minimum equipment to be furnished at the facility;

RESPONSE:

The equipment listed should be provided routinely at the Sabine Landfill to accomplish the periodic operation and maintenance functions required. This list represents the minimum equipment which will normally be provided. The listing of specific items is intended only to show the type of equipment. Additional units of equipment may be provided to enhance the operation. Should the method or scope of landfill operations change, this equipment list may be changed accordingly.

The following is a list of routine landfill equipment that may include but is not limited to at the Sabine Landfill:

- Compactor (1)
- Bulldozer (1)
- Excavator (1)
- Dump Truck (1)
- Pickup trucks (1)
- Radios (1)
- Scales (1).

If reserve equipment is needed due to equipment breakdown or routine maintenance, additional equipment will be rented from local sources.

521.H.1.d.

Plan to segregate wastes, if applicable;

RESPONSE:

Waste will not be segregated at the Sabine Landfill unless waste characterization information indicates a possible reaction with waste already landfilled at the working face. As stated previously, waste placement may occur in difference areas simultaneously, depending on weather conditions, ease of access, and availability of landfill space.

All white goods and vehicles delivered to the site, including inoperative and discarded refrigerators, ranges, washers, water heaters, and other similar domestic and commercial appliances, will be stored in a unit separate from other solid waste and shall be removed every 30 days and shipped to a contracted recycler in accordance with LAC 711.D.5. The facility shall maintain a log of dates and volumes of white goods removed from the facility. ~~White goods and tire collection will be provided in the designated area. (Reference Exhibit 3A) Roll-off boxes will be provided for storage.~~ Waste tires, appliances and other discarded metal case goods will be temporarily stored in the white goods/tire storage area prior to transportation to an offsite recycling facility.

521.H.1.e.

Procedures planned in case of breakdowns, inclement weather,

and other abnormal conditions (including detailed plans for wet-weather access and operations);

RESPONSE:

If landfill equipment is needed due to breakdown or routine maintenance, additional equipment will be rented from local sources within 24 hours.

During extremely windy periods, the potential for problems with windblown waste increases. To minimize the adverse effects of high wind, it may be necessary to erect additional litter control fences, increase the height of existing fences, or relocate the working face operation in a protected or semi-protected area of the landfill. For example, the landfilling operation may be relocated to a lower site elevation during windy weather rather than near the more exposed upper site elevations.

Rain also may affect landfill operations adversely. During rainy weather, access to the working face along the onsite roads must be maintained. It may be necessary to grade out ruts more frequently, or it may be necessary to apply road base material to the onsite access roads to counteract the effects of rain. Sabine Parish Landfill will maintain approximately 100 cubic yards of concrete rubble, masonry demolition debris, or aggregate road base material for use in maintaining passable access roads during wet-weather operations.

Rainfall into the landfill may result in leachate formation. During rainy weather, the working face area should be minimized as much as possible to help prevent rain from soaking into refuse at the working face. Temporary and permanent dikes and diversion ditches will be routinely constructed during the operating life of the landfill to divert surface water runoff away from the working face. Under no circumstances will surface water runoff flow unrestricted into the landfill or into the working face area from areas that have received daily or interim cover. Previously landfilled areas will be checked frequently during wet weather to verify that the daily or interim cover soil has not eroded and that solid waste is not exposed. If cover soil has eroded, additional soil has not eroded and that solid waste is not exposed. If cover soil has eroded, additional soil will be provided.

Procedures planned for other abnormal conditions are included in the Contingency Operation Plan (see Appendix 19).

521.H.1.f

Procedures, equipment, and contingency plans for protecting employees and the general public from accidents, fires, explosions, etc., and provisions for emergency care should an accident occur (including proximity to a hospital, fire and emergency services, and training programs); and

RESPONSE:

Procedures and equipment planned for accidents, emergencies, fire,

and explosion, are included in the Contingency Operation Plan (see Appendix 19). Correspondence with local Emergency Response providers is included in Appendix 13.

All Sabine Landfill employees will receive proper safety training and emergency response training as part of Sabine Parish Landfill's overall employee training program (see Appendix 20. Sabine Parish Landfill's Safety Policy and Procedures (see Appendix 18) have been adopted to protect Sabine Parish Landfill employees from possible harm.

In the event of an emergency which threatens human health or the environment, the emergency coordinator will implement the Contingency Operation Plan included in Appendix 19.

Site security measures have been adopted for the Sabine Parish Landfill to protect unauthorized persons onsite from possible harm, to protect the facility and its equipment from possible damage caused by caused by careless or malicious actions by trespassers, and to eliminate disruption of facility operations which may result from unauthorized entry onsite.

521.H.1.g.

Provisions for controlling vectors, dust, litter, and odors.

RESPONSE:

All waste transportation vehicles using the Sabine Landfill will be required to have adequate covers or other means of containment for transported waste. The adequacy of covers or containment of incoming waste will be checking at the facility entrance by the scale masterattendant.

Daily cover will be applied to all waste to minimize fire hazards, odors, blowing litter, vector food and harborage, and discourage scavenging. An alternate daily cover consisting of tarps will be used at the working face. The daily cells will be stacked and overlapped to minimize the number of tarps required. Every seventh day, all the tarps will be removed and 6 inches of soil will be placed on exposed waste.

This weekly cover soil shall consist of soils which have not previously been in contact with solid waste. Generally, this soil will be transported and deposited near the upper surface of the working face. The landfill compactor or a bulldozer will then spread and compact the soil along the top, sides, and front of the working face. Care will be taken to avoid mixing the landfilled waste with the soil cover material. A 6-inch minimum cover will be provided over all exposed waste.

VECTOR CONTROL

The need or extensive vector control (control of rodents, flies, and mosquitos) will be minimized through the landfill operation. The application of daily, weekly, interim, and final cover will prevent rodent habitation of the landfill. Ongoing compaction and covering of

solid waste and the absence or nearby shelter (weeds, debris, etc.) present a hostile, unsuitable environment for rodents.

Mosquito control will be provided by preventing the development of stagnant bodies, of water which foster mosquito reproduction. Periodic grading and maintenance of the landfill and its drainage systems will eliminate features favorable for mosquito reproduction. Mosquito control will also include spraying the area.

LITTER CONTROL

Windblown waste will be decreased by disposing of the waste in an area that provides some wind cover. Landfill equipment will be operated and positioned to deposit waste to the working face and to spread and compact the waste as rapidly as possible. The amount of time the waste remains exposed to the wind is therefore minimized. Soil cover may also be placed over solid waste during the day's operations to help control the waste. Personnel will patrol the entire site and access roads and collect fugitive litter and windblown waste.

During extremely windy periods, the potential for problems with windblown waste increases. To minimize the adverse effects of high wind, it may be necessary to erect litter control fences or increase the height of the existing fences.

DUST CONTROL

During dry periods, the on-site roads and other areas requiring dust control will be watered down.

521.H.2. Facility Operational Plans

- 521.H.2.a.** A comprehensive operational plan describing the total operation, including (but not limited to) inspection of incoming waste to ensure that only permitted wastes are accepted (Type II landfills must provide a plan for random inspection of incoming waste loads to ensure that hazardous wastes or regulated PCB wastes are not disposed of in the facility.); traffic control; support facilities; equipment operation; personnel involvement; and day-to-day activities. A quality-assurance/quality-control [QA/QC] plan shall be provided for facilities receiving industrial waste; domestic-sewage sludge; incinerator ash; friable asbestos; nonhazardous petroleum-contaminated media; and debris generated from underground storage tanks [UST], corrective action, or other special wastes as determined by the administrative authority. The QA/QC plan shall include (but shall not be limited to) the necessary methodologies; analytical personnel; pre-acceptance and delivery restrictions; and appropriate responsibilities of the generator, transporter, processor, and disposer. The QA/QC plan shall ensure that only permitted nonhazardous wastes are accepted;

RESPONSE: The Solid Waste Analysis and Management Plan (see Appendix 14) has been developed to manage the acceptance of waste received at the Sabine Parish Landfill. Random inspections, procedures to analyze and manage the movement of waste received at the site, and methods to be used in determining the identity of each waste received at the site are described in this plan. A system of management controls if provided to ensure that only permitted waste, including solid waste from residential, commercial, and industrial sources, will be disposed of at the Sabine Parish Landfill.

521.H.2b. Salvaging procedures and control, if applicable; and

RESPONSE: Salvaging will not be permitted at the Sabine Landfill. Salvage operations at the working face would cause unsafe operating conditions and disruptions to landfill operations.

521.H.2c. Scavenging control.

RESPONSE: Scavenging will not be permitted at the Sabine Parish Landfill. Scavenging will be controlled by securing the site from unauthorized access with a perimeter barrier. In addition, all transporters entering the landfill area will be monitored by landfill personnel to ensure that scavenging does not occur.

521.H.3 The following information on operational plans is required for Type I and II landfarms:

RESPONSE: There will be no landfarms at the Sabine Landfill; therefore, this section is not applicable.

521.H.4 The following information on operational plans is required for Type I-A and II-A incinerator waste-handling facilities and refuse-derived energy facilities:

RESPONSE: Incinerator ash will be accepted for disposal at the Sabine Parish Landfill as described in the response to LAC 33:V11.521.H.1.a and the SWAMP (Appendix 14). There will be no incinerator waste handling facilities at the Sabine Parish Landfill; therefore, this section is not applicable.

521.H.5 The following information on operational plans is required for Type I-A and II-A refuse-derived fuel facilities and Type III separation and composting facilities:

RESPONSE: There will be no refuse-derived fuel facilities, Type III separation and composting facilities at the Sabine Parish Landfill; therefore, this sections is not applicable.

521.H.6 The operational plan for Type I-A and II-A refuse-derived fuel facilities and Type III separation and composting facilities must include a description of marketing procedures and control.

RESPONSE: There will be no refuse-derived fuel facilities, Type III separation and composting facilities at the Sabine Parish Landfill; therefore, this section is not applicable

521.H.7 The operational plans for. Type I and II facilities receiving waste with a potential to produce gases must include a comprehensive air monitoring plan.

RESPONSE: Sabine Parish Landfill will perform air monitoring at the site as provided in the Methane Monitoring plan (see Appendix 22).

LAC 33:VIL523.A A discussion demonstrating that the potential and real adverse environmental effects of the facility have been avoided to the maximum extent possible;

RESPONSE:

1. INTRODUCTION

Environmental consideration has been incorporated in the design phase of the Sabine Parish Sanitary Landfill. Significant potential and real environmental effects of the project have been identified and considered in the final design. Every realistic, economically feasible step has been taken to avoid the adverse environmental effects or to minimize the potential or adverse environmental impacts. Alternative projects and sites were examined to determine if they would offer more protection to the environment than the sanitary landfill. The project provides the most cost-effective, comprehensive environmental solution to the problem of solid waste disposal for Sabine Parish.

2. POTENTIAL ENVIRONMENTAL AFFECTS

2.1 Leachate

Leachate generation is a potential adverse environmental effect of a sanitary landfill. Moisture is contained in the waste material as received. Moisture in the waste is of some benefit because decomposition of the material and landfilling is accelerated. Excessive moisture, however, can form a potentially-hazardous liquid called leachate. Leachate can be several thousand times more potent than the wastewater of a sewage treatment plant in terms of oxygen demand. Leachate can also have pathenogenic bacteria and concentrations of soluble heavy metals (lead, mercury, cadmium, etc.) which are toxic metals. Obviously, leachate that is allowed to escape the waste confinement area either in surface runoff or through infiltration into groundwater could severely damage water quality in the vicinity. Depending on surface drainage and groundwater aquifer characteristics, water quality damage and potentially hazardous situations could also develop in locations well away from the confinement area.

State regulations therefore require that the natural soils at a landfill site be resistant to the passage of water. If the natural soils do not meet permeability and/or thickness standards, there are two choices available: One, either suitable liner soil material must be imported to the site or two, some type of totally impervious, synthetic liner material (such as plastic) must be used.

Soil samples at the site have been analyzed and indicate large quantities of suitable on-site clays which meet or exceed State permeability standards. Grading plans for the facility utilized the soils information to restrict the potential for leachate flows into groundwater sources.

2.2 Methane and Hydrogen Sulfide.

The production of gases due to waste decomposition is a second, potential adverse environmental effect. Wastes in a landfill undergo decomposition by anaerobic digestion, i.e., bacteriological action in the absence of oxygen. The gases produced by this action are for the most part methane and hydrogen sulfide. Hydrogen sulfide is quite odorous, and both methane and hydrogen sulfide are highly explosive.

A gas collection system for the proposed facility was considered but rejected due to cost and remote site location. There are no land uses adjoining the site which would suffer from the potential for gas production at the site. There are also no future uses of the landfill site or adjoining areas which would require installation of a gas collection system to minimize explosion hazard. Site soils, in addition should provide an effective, tight seal against excessive venting of odorous gases to the atmosphere.

Lack of a gas venting or collection system for the landfill should not present any real problems or special hazards. Site soils are sufficiently tight to prevent major intrusion of water *which* would accelerate anaerobic decomposition and create excessive buildup of internal pressures. Total void spaces in a landfill are quite large, and, due to the compressibility of gasses, provide some accommodation for gas production without excessive pressure buildup. The few inches of water column pressure developed, however, over time will permit escape of landfill gases to the atmosphere in relatively small quantities. There should be no odor or explosion hazards associated with these small releases due to dispersion and dilution by atmosphere.

3. REAL ENVIRONMENTAL EFFECTS

3.1 Disruption of Wildlife Habitat.

The primary adverse environmental effect of the facility is the destruction of wildlife habitat. Clearing and grading in each phase will disrupt the habitat in the immediate vicinity only. Each phase is relatively small compared to the amount of wildlife habitat available in Sabine Parish and in the area

surrounding the landfill site. To minimize the potential negative impact on wildlife habitat, each landfill phase will be reforested after completion to restore wildlife habitat and minimize negative impacts of erosion and sedimentation of area streams.

3.2 Erosion and Siltation.

A second real environmental effect of the project is erosion/sedimentation. Soils at the site are not, however, particularly subject to erosion, being of high clay content and very sticky when wet. However, a landfill consists of a continuous earthmoving operation throughout the year. Erosion will occur over time and could decrease downstream channel carrying capacities and degrade surface water quality. These effects are mitigated in the design by inclusion of sedimentation basins to capture all runoff from the four major work phases. Release from the sedimentation basins is to stabilization ponds, which should serve to further reduce turbidity levels and provide stabilization for any small fractions of runoff which may have come in direct contact with waste materials.

3.3 Contaminated Runoff.

Contaminated runoff is another real, potential environmental impact of the facility. Surface runoff from all landfill phases will be directed to stabilization catchments prior to release to the environment. The amount of runoff contaminated by contact with waste materials will be very small. Actual contact of rainfall with waste material will occur on an area of less than 3,000 square feet during daylight operation only. At all other times, surface runoff will occur from only natural areas and disturbed construction areas. Disturbed areas will not comprise more than one-third of a landfill phase at any given time due to reforestation and reseeding work that will be done on completed areas.

All surface runoff will be directed into sediment retention basins ahead of the stabilization ponds. The 31 acres comprising landfill Phases 1 through 3, for example, will drain first into a large sediment basin and then into a 1.2 acre surface area stabilization pond. This facility is intended to treat primarily biochemical oxygen demand and suspended solids. The pond has the assimilative capacity for the equivalent to domestic sewage of 210 people per day (based on 30 pounds BOD₅ per acre of surface area). The pond will have a permanent depth of 4' (one foot allowed for siltation/sedimentation) and will discharge only in the event of significant rainfall. The pond outlet pipe can be equipped, if necessary, for zero discharge and for weir-type flow measuring; these appurtenances are not felt to be needed due to the very small proportion of pollutant loading to the pond, if any, as compared to the total site runoff volume.

LAC:VH.523.B

A cost benefit analysis demonstrating that the social and economic benefits of the facility outweigh the environmental-impact costs;

RESPONSE: ENVIRONMENTAL COST-BENEFIT ANALYSIS

A sanitary landfill is the most cost-effective way to dispose of waste material on a large scale, before the recent completion of approximately 60 waste pickup stations and institution of a single, interim burial operation, Sabine Parish operated approximately 24 dump pits for the use of all parish residents. Other dump pits and illegal dumps were also in use throughout the rural areas. There was no daily operation or supervision for the use of these pits. Many sites were located in close proximity to Toledo Bend Lake or direct tributaries to the lake. Surface runoff from the uncontrolled site were adding to the lake pollutant loading and general degradation of the water quality of parish streams.

Periodic fires were also a real hazard for owners of property adjacent to the open dump sites. Some of the pits were located in highly permeable soils, which could have produced groundwater pollution and damages to nearby residential wells and stock ponds. The unsupervised sites also posed other health and safety problems - unsanitary conditions, broken glass, wire and metal fragments, and general litter posed constant threats to the users of the locations.

Parish's current waste collection program and daily waste burial operation has provided interim solutions to the above problems. A more permanent solution, however, is being sought in the form of a large-scale, land disposal facility, and a sanitary landfill.

The sanitary landfill will provide monitored, controlled waste disposal with daily covering of wastes, controlled runoff, and means of intercepting and managing any leachate production that might occur. Site selection was based on detailed knowledge of soil conditions, groundwater stratum known or suspected to be water-bearing, topography, and *other* factors necessary to develop and environmentally sensitive sanitary landfill. Both the short-term and the long-term benefits of a supervised, properly designed and operated landfill greatly outweigh the potential environmental cost and damages associated with open dumping. The facility cost is partly offset by the positive economic benefit of increased, long-term employment opportunities for Parish residents. In summary, the project has an excellent cost-to-benefit ratio, considering the favorable long-term employment and abatement in to environmental damages/liabilities situation with the open dump system.

LAC 33:VII.523.C A discussion and description of possible alternative projects which would offer more protection to the environment without unduly curtailing non-environmental benefits;

RESPONSE: ALTERNATIVE PROJECTS

1. Incineration

Incineration was considered as an alternative to the landfill. Incineration requires substantially more capital and operating costs for a sanitary landfill. Burning facilities involve costs for items such as furnaces, air pollution control devices, highly-mechanized waste handling equipment, fans and other energy-consuming devices. Operations and maintenance costs for waste incinerators are much higher than for operation of a sanitary landfill.

Air pollution is a major, potential adverse environmental impact of incinerators. Emission constituents include particulate matter, sulphur dioxide carbon monoxide, hydrocarbons, and nitrogen dioxide. Also, sanitary landfilling is still required in association with incineration for disposal of ash and non-burnable materials.

In comparison to landfill disposal, municipal waste incineration is quite costly in terms of both capital and operating expense. The Sabine Parish wasteload is too small to make construction and operation of an incineration system feasible. Sabine Parish is also a very rural parish, and relatively low land costs suggest that landfilling should be the preferred long-term waste disposal option.

2. Resource Recovery

Resource recovery was also considered as a waste disposal option for Sabine Parish. Consideration was given to use of modular, mass-burn technologies with heat recovery for the production of useable energy. Steam and electric power were considered as energy products with aluminum recovery as a secondary resource recovery option.

Sabine Parish would require a 50 ton-per-day modular plant equipped with relatively high-pressure boilers for use in cogeneration of electric power. Front-end processing of residential wastes using trommels would enable aluminum recovery in the form of can stock and produce a more uniform solid waste fuel. Magnetic separation after trammeling could be done to reduce furnace and ash removal systems maintenance, but would not produce a marketable ferrous fraction.

Outputs from a 50 ton-per-day resource recovery plant as described would include 10,000 to 13,000 pounds per hour steam production; 400 to 500 Kw generating capacity; and 100 to 150 pounds per day recovered aluminum. The facility cost would run from \$40,000 to \$50,000 per ton of operating capacity or between \$2.0 and \$2.5 million.

Markets for recovered energy exist within Sabine Parish. Area timber concerns use process steam for material drying. Electric power can be marketed to public utilities under the Federal Public Utilities Regulatory Act (PYPRA). Recovered aluminum can stock markets also exist both within Sabine Parish and in Shreveport.

Under current market interest rates, the economic feasibility for a resource recovery plant for Sabine Parish appears good on a long-term basis. However, the resource recovery disposal option suffers from the fact that a permitted sanitary landfill would still be required for ash disposal, disposal of bulky and non-combustible wastes, and as a backup to the resource recovery plant. Another disadvantage lies in the fact that steam-using private industries are often reluctant to enter into long-term commitments for steam purchases; without such a long-term (20-year) commitment, a resource recovery plant for Sabine Parish would not be economically feasible.

Due to the very high costs for the required dual development of a sanitary landfill and a resource recovery plant, time limitations and requirements placed by State law, and the economic uncertainties connected with any resource recovery plant, the resource recovery disposal option for Sabine Parish was rejected in favor of reliance on landfill disposal, at least for the near term. However, construction of a permitted sanitary shred fill option does not appear to be a cost-effective solution due to the much higher operational costs involved. Also, shred fills does not provide any additional environmental benefits over those provided with a conventional sanitary landfill.

3. Composting.

Composting is currently one of the most expensive of the accepted disposal methods for municipal solid waste. Costs per ton for composting far exceed costs per ton for landfilling. Also, composting has similar potentials, and in some areas far greater potentials, for adverse environmental impacts than do sanitary landfills.

4. Sanitary Landfill.

The sanitary landfill provides the most environmental protection of all the alternative projects considered and is the most cost-effective of the alternatives.

LAC 33:VIL523.D A discussion of possible alternative facilities which would offer more protection to the environment without unduly curtailing non-environmental benefits; and

RESPONSE: ALTERNATIVE SITES

Sixteen (16) potential landfill sites were examined with respect to geology, surface drainage patterns, site availability, size, geographic location, adjacent development, terrain, and existing land use. The candidate sites were ranked according to suitability for a landfill site according to published standards. The top four sites were then subjected to more detailed soils exploration and analysis. Based on the results of soil exploration to a depth of 8' and the permeability test results obtained in the laboratory, the candidate sites were again ranked, again with consideration to all of the factors mentioned above the published standards.

Based on the more detailed soils work, two sites were selected for more thorough soils exploration and analysis. Soil stratus encountered on the two sites were tested for moisture content, density, liquid limit, plasticity index, spectrometer resistance, and permeability. A top site choice was made for even more detailed soils analysis and exploration work, but had to be rejected due to public opposition.

The site was selected in the same general vicinity as the originally preferred site so as to have maximum probability of encountering the same basic soils types. This location was selected, however, on minimum potential for public opposition. The most extensive geotechnical work was completed for the site. Laboratory and field testing has revealed a suitable landfill site location with maximum potential for development of a long-term sanitary landfill with minimum potential for adverse environmental impacts.

LAC: 33 II.523.E A discussion and description of the mitigating measures which would offer more protection to the environment than the facility, as proposed, without unduly curtailing non-environmental benefits.

RESPONSE: MITIGATING MEASURES

A mitigating measure which would decrease the size of the facility would be the separation of recyclable materials at waste sources or at the point of landfill entry. This waste control measure would be environmentally beneficial, but would be difficult to implement and costly to operate.

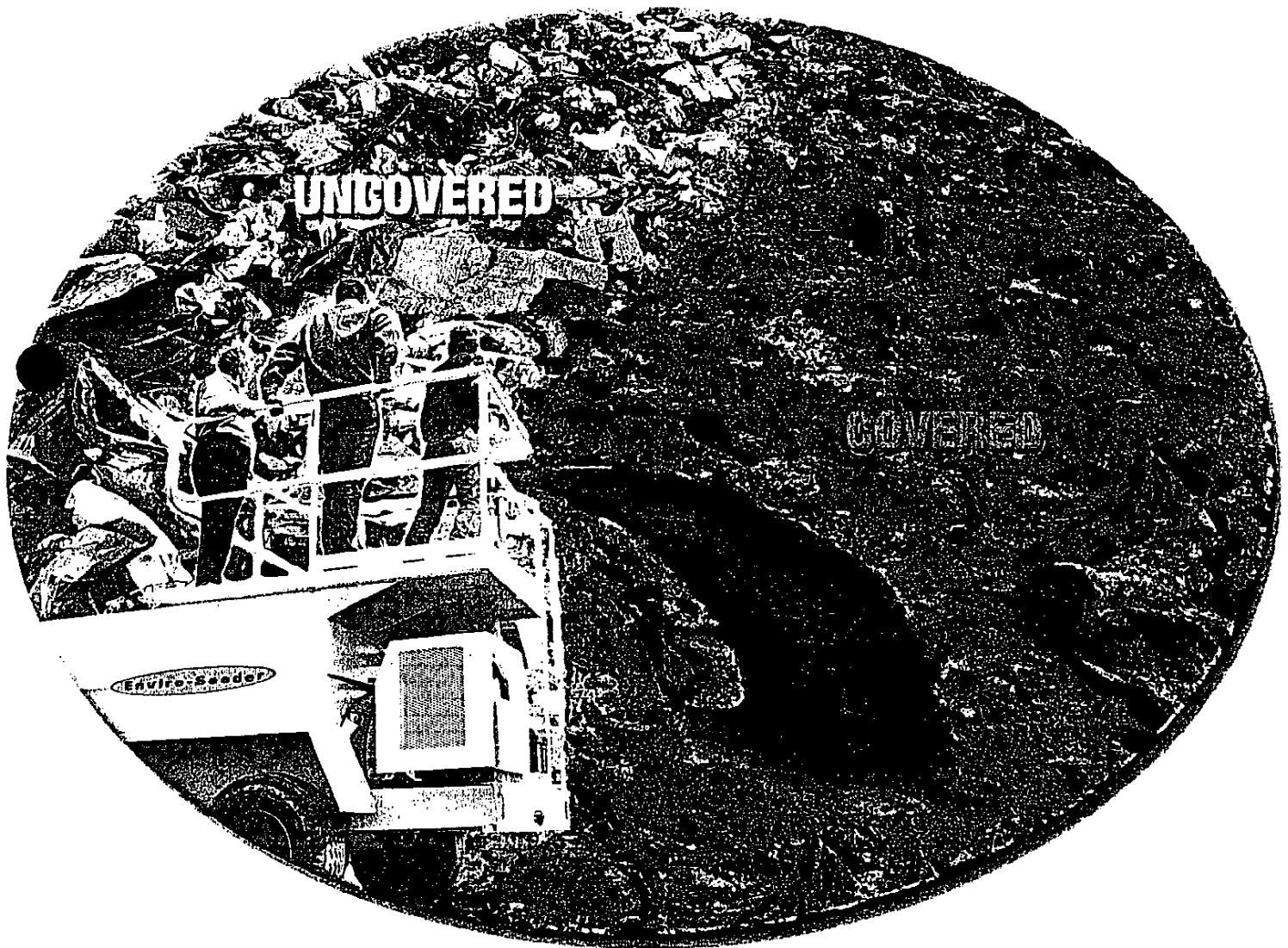
CONCLUSION

Every attempt has been made to provide that the Sabine Parish Sanitary Landfill recognizes potential and real environmental effects and provides appropriate mitigation and control measures. Attention has also been given to the most cost-effective reliable measures possible. Reliable operation and maintenance is the key to successful operation with minimal potential for adverse environmental effect. These factors assure that the best efforts have been taken for the protection of the environment at an affordable public cost.



WASTE-COVER **DAILY LANDFILL COVER**

By the year 2009, four of five landfills will be full!



SOUTHWEST ENVIRONMENT SERVICES, INC.

2400 E. ERWIN • P.O. BOX 134 • TYLER, TEXAS 75702

903/531/2211 • FAX 903/531-2312

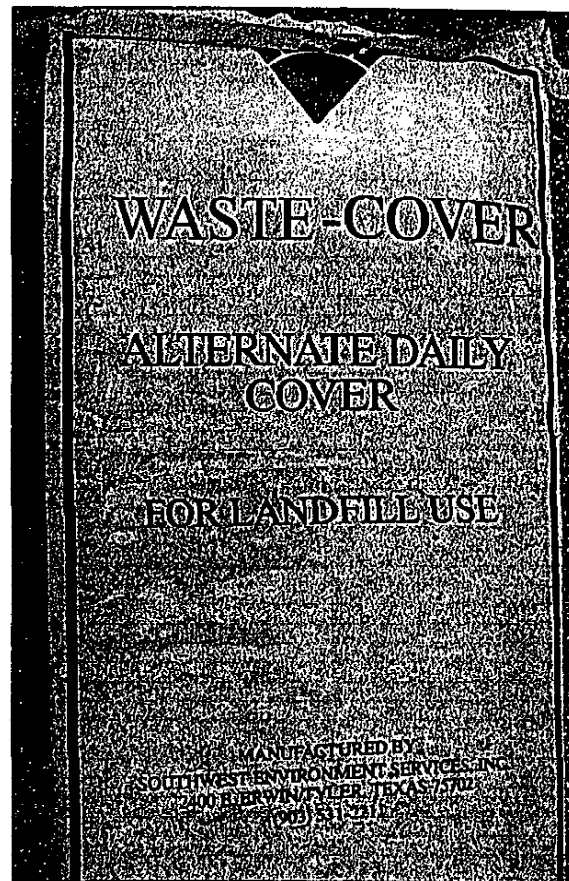
Web Site - www.southwestenvironment.com

"A Leader in Erosion Control"

WASTE-COVER

WASTE-COVER is an alternate daily landfill cover manufactured from recycled paper and wood, polymers, enzyme complex, and other proprietary ingredients. Waste-Cover helps breakdown the garbage faster and helps alleviate odors. All ingredients are non-toxic and biodegradable. Lend Mother Nature a helping hand, make your landfill more efficient by using Waste-Cover.

- ✦ Meets ASTM D6523-ADC
- ✦ Easy to mix
- ✦ Sprays easily
- ✦ Non-flammable
- ✦ Controls blowing litter
- ✦ Controls odor and disease vector
- ✦ Aesthetically acceptable
- ✦ Repels vermin
- ✦ One dry component, eliminates fine powders and dust
- ✦ Use conventional hydraulic mulching machines



Mix Ratio & Coverage Data

Mix ratio: 1 bag to 60 gallons water
 Coverage (1 bag): 450 sq. ft. per bag

Application and Coverage Data

Tank	Amount Water	Pounds of Waste-Cover	Number of Bags	Coverage Sq.Ft.
500 gal.	420 gal.	350 lbs.	7	3150 sq. ft.
700 gal.	540 gal.	450 lbs.	9	4050 sq. ft.
900 gal.	780 gal.	650 lbs.	13	5850 sq. ft.
1100 gal.	900 gal.	750 lbs.	15	6750 sq. ft.
1200 gal.	1020 gal.	850 lbs.	17	7650 sq. ft.
1500 gal.	1380 gal.	1150 lbs.	23	10350 sq. ft.



MATERIAL SAFETY DATA SHEET

Identity: **WASTE COVER**
 (Alternate Daily Cover)

I. General Information

Manufacturer's Name:	Southwest Environment Services
Address:	2400 East Erwin, Tyler, Texas 75702
Telephone Number:	(903) 531-2211
HMIS Rating:	Health - 0 (normal material)
	Fire - 1 (flash point above 200°F)
	Reactivity - 0 (stable)

II. Hazardous Ingredients

Component:	Paper/Wood Mulch (as fibers) 67-68 % by wt
CAS:	9004-34-6 (as fibers), non-hazardous material except for potential of air-borne fibers.
OSHA PEL:	For fibers/dust - 15 mg/m ³ (total), 5 mg/m ³ (respirable)
Component:	Binder (non-specific) 30 % by wt
CAS:	26499-65-0
OSHA PEL:	For dust - 15 mg/m ³ (total), 5 mg/m ³ (respirable)
Component:	Ammonium sulfate 2 % by wt
CAS:	7783-20-2
OSHA PEL:	For dust - 15 mg/m ³ (total), 5 mg/m ³ (respirable)

Remaining Ingredients Constitute Less Than (<) 1 % of Product Material.

III. Physical Characteristics

Appearance:	Mulched solid, tan, grayish-green
Odor:	No discernible, characteristic odor
Density:	0.97 g/cm ³
pH:	6.2
Solubility (in water):	Insoluble; will disperse in water
Melting/Boiling Point:	Not applicable
Reactivity in Water:	Non-reactive



IV. Fire and Explosion Hazard Data

Flash Point:	Greater than (>) 200°F
Combustibility:	Non-combustible at standard temperature and pressure, difficult to ignite.
Extinguishing Media:	Water/Foam
Fire Fighting Procedures:	Routine
Special Procedures:	None

V. Reactivity

Stability:	Stable
Compatibility:	For product integrity avoid excessive moisture or humidity until ready for use.
Conditions to Avoid:	None
Hazardous Polymerization:	Will not occur
Hazardous Decomposition:	None except those produced from typical combustion of normal materials (CO ₂ , CO).

VI. Health Hazard Data

Route(s) of Entry:	Inhalation (as dust/fibers), incidental ingestion, dermal/eye contact.
Primary route of Exposure:	Inhalation (as dust)
Effects of Overexposure:	Inhalation - mildly toxic as an acute irritant to mucus membranes and upper respiratory system. Ingestion - May cause gastrointestinal irritation, producing vomiting and/or diarrhea. Dermal/Eye Contact - May cause slight irritation to skin/eyes.
Carcinogenicity:	None
Aggravated Conditions:	Respiratory disorders or diseases may be aggravated by exposure from dust/fibers
Emergency/First Aid:	Inhalation - remove from exposure (remove to fresh air). If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Consult a physician. Ingestion - None required for slight ingestion. For large ingested quantity, induce vomiting. Consult a physician. Dermal/Eye Contact - Wash material from skin using soap and water. In case of eye contact, flush eyes with water.

Working for
a safer world**VII. Safe Handling and Use**

Storage: Maintain in original sealed containers provided by manufacturer. Material should be stored in a manner to prevent accumulations of airborne dust. Avoid excessive moisture/humidity to insure product integrity.

Releases or Spills: Sweep/remove excess material and containerize.

Waste Disposal Method: This material, as a waste and as provided by the manufacturer, is not a federally-defined hazardous waste (40 CFR 261). Dispose of in accordance with applicable Federal/State/Local requirements.

VIII. Special Protection/Control Measures

Respiratory Protection: Respiratory protection required if OSHA PEL (dust) is exceeded. Use of a standard pollen/dust type mask is recommended as a precautionary measure.

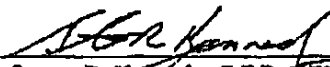
Ventilation: Normal ventilation is usually adequate to maintain exposure levels below OSHA PEL. Respiratory protection is required if allowable exposure level is exceeded.

Eye Protection: The use of goggles and/or safety glasses are recommended as a precautionary measure.

Skin Protection: The use of gloves is recommended as a precautionary measure if skin is broken or sensitive.

Work/Hygienic Practices: Clean and properly operating personal protective equipment (PPE) when required. No other PPE recommended or required. Use standard hygienic practices as with most non-hazardous materials.

Date Prepared: 4/16/02**Prepared by:**


Steven R. Kennedy, C.E.P., REM
ETTL Engineers & Consultants Inc.
Tyler, Texas
(903) 595-4421

Page 3 of 3 - MSDS - Waste Cover



PROCEDURE FOR APPLYING HYDROMULCH AS AN ALTERNATIVE DAILY COVER

TRAINING

The operators shall be familiar with the M.S.D.S. for all hydromulch material. Training will be conducted on the use of the material and the operations of the hydroseeder to properly apply the hydromulch.

MIXING PROCEDURE

The operator will mix the fiber material into the appropriate amount of water. Upon the addition of all bags of fiber, the total batch will be agitated at about half speed for a minimum of 15 minutes before application. The correct amount of all ingredients will be determined by the supplier. The total amount of the hydromulch to be applied is directly proportional to the size (square feet) of the active work face and the extent of the compaction of the surface. For each 900 square feet of active work face, the following amounts should be used:

Water	120 gallons
Waste-Cover	100 lbs.

APPLICATION PROCEDURE

The application of a hydromulch mixture should be done to the entire working face of the landfill at the end of the workday. This is best accomplished by directing the flow of hydromulch into the air allowing it to "rain down" onto the active working face. This will ensure that no shadows are created as a result of inadequate surface compaction. The operator may elect to apply the mulch from two directions to ensure that all areas are covered and all shadowing is eliminated. Complete coverage is required to meet LAC 33:V11.711.B.2. for controlling disease vectors, fire, odors, vermin, blowing litter, scavenging and creating an acceptable aesthetes. The hydromulch mixture must be applied to a thickness of 1/4 " or greater. This can be done from the tower of a standard hydroseeding machine.

If inclement weather conditions render the placement of hydromulch as a daily cover ineffective, the landfill shall temporarily revert to using another approved daily cover such as tarps or 6" of dirt.

The mixture of Waste-Cover is non-toxic, non-combustible, totally biodegradable, and harmless to fish, birds, plants, and animals.

Operation Plan:

- Fiber mulch mix will be applied as daily cover on well compacted exposed waste
- Materials will be mixed and applied to the entire active working face in accordance with the manufacturer's specification
- The application will be made at the end of each work day
- The hydromulch mixture will be applied with a landfill modified hydroseeder to a thickness of 1/4" or greater
- The hydromulch applied as a slurry should be allowed to dry for approx. 2 hours depending on weather conditions
- Traffic will be restricted over the areas covered until the material has set.
- Hydromulch can be applied in moderate rain. During heavy inclement weather, other approved material will be used for daily cover
- Each application should last for seven days, after which additional waste must be added to the working face or another application of hydromulch could be performed

Based on local D.E.Q. requirements

PROCEDURE FOR APPLYING HYDROMULCH AS AN ALTERNATIVE DAILY COVER

TRAINING

The operators shall be familiar with the M.S.D.S. for all hydromulch material. Training will be conducted on the use of the material and the operations of the hydroseeder to properly apply the hydromulch.

MIXING PROCEDURE

The operator will mix the fiber material into the appropriate amount of water. Upon the addition of all bags of fiber, the binder will be added last and the total batch will be agitated at about half speed for a minimum of 15 minutes before application. The correct amount of all ingredients will be determined by the supplier. The total amount of the hydromulch to be applied is directly proportional to the size (square feet) of the active work face and the extent of the compaction of the surface. For each 900 square feet of active work face, the following amounts should be used:

1-Water	100 to 110 gallons
2-Waste-Cover	100 lbs. (2 Bags)

APPLICATION PROCEDURE

The application of a hydromulch mixture should be done to the entire working face of the landfill at the end of the workday. This is best accomplished by directing the flow of hydromulch into the air allowing it to rain down onto the active working face. This will ensure that no shadows are created as a result of inadequate surface compaction. The operator may elect to apply the mulch from two directions to ensure that all areas are covered and all shadowing is eliminated. Complete coverage is required to meet LAC 33:V11.711.B.2. for controlling disease vectors, fire, odors, vermin, blowing litter, scavenging and creating an acceptable aesthetes. The hydromulch mixture must be applied to a thickness of $\frac{1}{4}$ " or greater. This can be done from the tower of a standard hydroseeding machine.

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- Each application should last for seven days¹, after which additional waste must be added to the working face or another application of hydromulch could be performed

¹Based on local D.E.Q. requirements

STE**Soil Testing Engineers, Inc.**

316 HIGHLANDIA DRIVE (70810) • P.O. BOX 83710 (70884) • BATON ROUGE, LOUISIANA
PHONE (225) 752-4790 • FAX (225) 752-4878 • www.steofla.com

GORDON P. BOUTWELL, JR., Ph.D.
CHING N. TSAI, Ph.D.
DANIEL J. HOLDER, MS
CHAD M. POCHÉ, MS
CHARLES S. HEDGES, MS
KENNETH A. FLUKER, MS
ZIAD H. ALEM, MS
STEVE M. MEUNIER
KELLIE T. MCNAMARA

November 21, 2001

Louisiana Vegetation
Post Office Box 33812
Baton Rouge, Louisiana 70884

Attn: Mr. Don Breaux

Re: Alternative Daily Cover
Flammability Potential
STE File: 01-3044

Gentlemen:

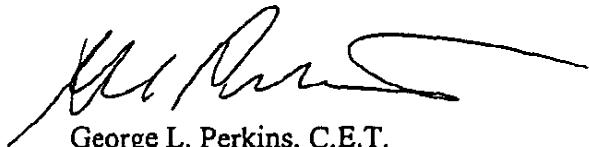
We have completed the Flammability Potential Screening Analysis of Waste (ASTM D4982-95) on a sample of WASTE COVER submitted by Mr. Andrew St. Pierre on November 21, 2001. Method A of the above procedure was performed on the sample submitted. Following Section 9 (Procedure) of Method A the sample was found to have a negative Flammability Potential.

If you have any questions concerning this information, please contact us at 225-752-4790.

Sincerely,
Soil Testing Engineers, Inc.



Ching-Nien Tsai, Ph.D., P.E.
Chief Engineer

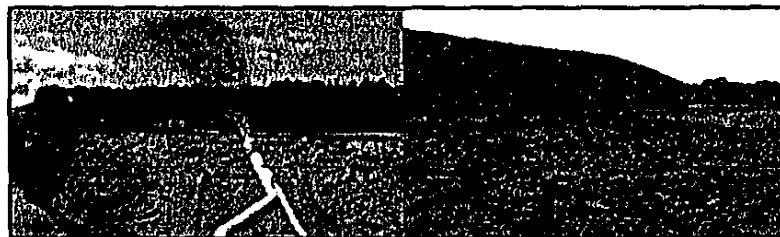


George L. Perkins, C.E.T.
QC Manager

GLP/kab



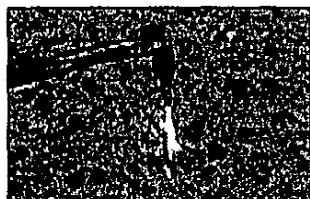
**Landfill Service
CORPORATION**



Description

Posi-Shell Cover is a spray-applied, cement-mortar coating, similar to stucco, used for landfill daily cover, intermediate cover, erosion prevention, and odor control.

Posi-Shell replaces costly, and sometimes scarce soil as daily cover of landfill solid waste, thereby preserving a valuable natural resource, as well as conserving valuable air space, and greatly extending the life of a landfill.



Simple to mix and easy to use, the Posi-Shell Cover System consists of a liquid base, a mineral binder, and specialized Posi-Pak fibers. Because it forms a durable, non-flammable crust that resists wind and water erosion, Posi-Shell is also ideal for applications such as erosion control, ditch-lining, dust control, cover for contaminated soil, compost, coal, or

cement clinker piles, mining applications, voc suppression, sludge tar lagoons, and similar industrial purposes.

POSI-SHELL ADVANCED FORMULATION



The Posi-Shell Advanced Formulation (AF) Cover System is a low-cost, versatile alternative to traditional landfill daily cover materials and is the ideal solution for both small and large landfills and industrial projects. It offers the same non-flammable durability as the traditional formulation of Posi-Shell, but our unique setting agent comes in bags for easy mixing and storage, plus it can be applied with common hydro-seeding equipment.



Posi-Shell AF is a spray-on slurry composed of water, Posi-Pak Type P-100 Fibers, PSM-200™ Setting Agent, and optionally, Portland cement. Like the traditional formulation of Posi-Shell, the Advanced Formulation hardens to a stucco-like cover that meets and exceeds regulatory requirements for the control of landfill vectors, fires, odors, blowing litter,

and scavenging.

Posi-Shell Description

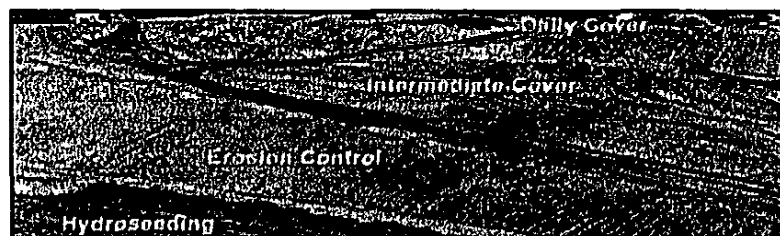
Page 2 of 2

Main Office
2183 Pennsylvania Avenue
Apalachin, NY 13732 USA

1 800 800 7671
Phone: 607 625 3050
Fax: 607 625 2689



**Landfill Service
CORPORATION**



DAILY, INTERMEDIATE, AND LONG-TERM COVER

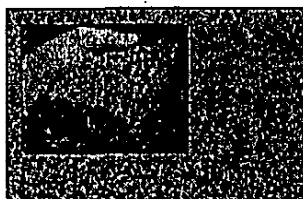


Posi-Shell has been approved for daily cover, and intermediate and long-term cover for landfills, stockpiles, and hazardous waste sites. The primary component of the formulation is a cementitious mineral binder reinforced with structural composite fibers, which results in excellent resistance to erosion and cracking and provides long-term durability in various weather conditions.



Applying Posi-Shell cover is a simple one-person operation using either the specialized Posi-Shell equipment with the traditional Posi-Shell formulation, or a standard hydroseeding unit and Posi-Shell Advanced Formulation. One load of Posi-Shell requires just one hour for mixing, application, and rinse-out. Landfill operators realize a huge savings in

airspace, labor, machinery, and fuel costs through use of the Posi-Shell Cover System over traditional soil cover.



After application, the Posi-Shell slurry hardens to a non-flammable and highly impermeable coating that easily conforms to the irregular contours of a landfill. Its color and texture provide a uniform appearance that is aesthetically appealing to nearby residents; and because of its inherent alkalinity, Posi-Shell suppresses typical landfill odors as well.



Posi-Shell is highly effective in preventing wind-blown litter, landfill fires, scavenging, and vector problems. Posi-Shell has met the rigorous standards required for approval by numerous state regulatory agencies and has been favorably

evaluated for Superfund use by the USEPA. Made of non-flammable, non-toxic materials, Posi-Shell is an environmentally compatible, multi-purpose landfill cover solution.

Posi-Shell Cover System:

- Conserves airspace
- Mitigates odors
- Reduces airborne debris
- Controls vector populations
- Enhances safety through non-flammability
- Discourages scavenging
- Cuts operating expenses
- Extends landfill life
- Increases profits

Main Office
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Apalachin, NY 13732 USA

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BRIEF SPECIFICATIONS

- Spray applied mortar containing greater than 50% by weight, cementitious mineral binder
- Fiber reinforced mixture incorporating quarter-inch very fine (1.5 ± 0.2) denier polyester fibers with proprietary finish for rapid, non-clumping, aqueous dispersal
- Non-combustible, non-fuel contributing, and non-smoke releasing in accordance with ASTM 1354
- No free liquid in accordance with paint filter test (negative result for SW-846)
- Hydraulic conductivity not greater than 1×10^{-5} cm/sec when cured
- Non-toxic as indicated by TCLP testing
- Self-contained diesel/hydraulic mineral binder storage silo with 50 ton Portland Cement capacity, capable of feeding 1 ton per minute into mixer-applicator
- Self-contained diesel/hydraulic towable mixer-applicator with 2000 gallon minimum slurry capacity capable of mixing load within 10 minutes. Progressing cavity mortar pump able to shoot mortar slurry 150 ft @ 100 GPM



BRIEF SPECIFICATIONS

- Spray applied mortar containing approximately 25% by weight, cementitious mineral materials
- Excellent opacity and adhesion to heterogeneous waste materials
- Fiber reinforced mixture incorporating quarter-inch very fine (1.5 ± 0.2) denier polyester fibers with proprietary finish for rapid, non-clumping, aqueous dispersal
- Complies with ASTM D6523 "Evaluation and Selection of Alternate Daily Covers (ADC) for Sanitary Landfills
- Non-flammable in accordance with ASTM D4982 "Flammability Potential Screening Analysis for Waste"
- No free liquid in accordance with paint filter test (negative result for SW-846)
- Non-toxic as indicated by TCLP testing
- Can be applied with commonly available hydroseeding equipment, or with specialized landfill ADC machines



**Landfill Service
CORPORATION**



Application Coverage Rates

	BROTHLY COVER OVERLAP COVER	INTERMEDIATE COVER EROSION CONTROL DOOR COVER ETC.	LANDFILL COVER COASTAL COVER STOCKPILE COVER
COUNTRY MATERIAL		Additional Partial Cover May be necessary	Additional Partial Cover May be necessary
APPLICATION METHOD	Apply by hand	Apply by hand	Apply by hand
COVERAGE DEPTH	Apply from 1/2" to 1" in thickness in random spots	Apply from 1/2" to 1" in thickness in random spots	Apply from 1/2" to 1" in thickness in random spots
COVERAGE THICKNESS	Finished layer should be 1/2" to 1" thick	Finished layer should be 1/2" to 1" thick	Finished layer should be 1/2" to 1" thick
COVERAGE APPEARANCE	No visible and visible lines or joints	No visible and visible lines or joints	No visible and visible lines or joints
COVERAGE MAINTENANCE	Cover should be placed prior to the next working day	Cover should be placed prior to the next working day	Cover should be placed prior to the next working day

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American Standards Testing Bureau, Inc.

40 WATER STREET, NEW YORK, N.Y. 10004

PHONE: (212) 643-3156

FAX: (212) 676-2260

July 20, 1995

Landfill Service Corporation
2183 Pennsylvania Avenue
Apalachin, NY 13732

Att: Mr. George Heslon

Gentlemen:

RE: Heat & Visible Smoke Release Rates for Posi-Shell
ASTB P. #1235-536; LR. #29007

Pursuant to your recent request, ASTB/New York received and tested the heat and visible smoke release rates for one (1) Posi-Shell Cover System product as per the requirements of ASTM E-1354. The nominal heat fluxes were 25, 35 and 50 kW/m², respectively, and all specimens were tested in the horizontal orientation.

The Posi-Shell sample tested did not ignite at 25, 35 or 50 kW/m². At the most extreme heat flux, 50 kW/m², the mass loss of the specimen was 8.9%, although little or no smoke was observed. The measured peak and average values of the heat and visible smoke release rates at 50 kW/m² are:

<u>PEAK AND AVERAGE VALUES (50 kW/m²)</u>	<u>PEAK</u>	<u>TIME</u>	<u>AVERAGE</u>
Heat Release Rate (kW/m ²)	6.9	167	3.6
Eff. Heat of Comb. (MJ/kg)	827.8	512	2.7
Specific Ext. Area (m ² /kg)	4.2	17	0.4
CO (kg/kg)	0.0	600	0.0
CO2 (kg/kg)	0.8	380	0.0

Since ignition did not occur, the heat release rate, total heat released and effective heat of combustion are not considered to be useful data but are reported for completeness. In summary, the Posi-Shell examined must be classified as non-combustible, non-fuel contributing and non-smoke releasing material.

Respectfully submitted,

AMERICAN STANDARDS TESTING BUREAU, INC.

A.C. Brooks
S. C. Brooks, P.E.
Project Engineer

V. Morfopoulos
V. Morfopoulos, Eng.Sc.D.
Technical Director

SCB/VM/dk
Enc.



SOIL & MATERIAL TESTING, INC.

57 SOUTH MAIN STREET • CASTLETON, N.Y. 12033

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Binghamton
Kingston
Pittsfield

Telephone
(607) 722-1582
(914) 336-4471
(413) 499-5338

HYDRAULIC CONDUCTIVITY TEST DATA

Project Name: LANDFILL SERVICE CORP. POST-SHELL

Client: Landfill Technologies, Inc.
PO Box 519
West Sand Lake, New York 12196

SMT Project No. 80799

Sample Description: Visual Description:
Gray Cementitious Material
Sample #1
Undisturbed Shelby Tube Specimen:

Date Sampled: 10/23/95
Date Reported: 10/31/95

Date Tested: 10/27/95
Reviewed By: REV *RW*

Test Standard: ASTM D 5084
Test By: DW

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

Length = 8.20 cm
Diameter = 7.21 cm
Moisture Content = 63.0%
Wet Density = 96.5 pcf
Dry Density = 59.2 pcf

Test Conditions

Back Pressure = 66.0 psi
Cell Pressure = 70.0 psi
Hydraulic Gradient = 10
Permeant Liquid: Air-less
Tap Water

Remarks:

Hydraulic Conductivity: $k_{20} = 1.5 \times 10^{-6}$ cm/sec

SOIL & MATERIAL TESTING, INC.

Thomas M. Kenney
Thomas M. Kenney



SOIL & MATERIAL TESTING, INC.

57 SOUTH MAIN STREET • CASTLETON, N.Y. 12033

Office
Castleton

Telephone
(518) 732-7205
Fax (518) 732-4516

Office
Binghamton
Kingston
Pittsfield

Telephone
(607) 722-1582
(914) 336-4471
(413) 499-5338

HYDRAULIC CONDUCTIVITY TEST DATA

Project Name: LANDFILL SERVICE CORP. POSI-SHELL

Client: Landfill Technologies, Inc.
PO Box 519
West Sand Lake, New York 12196

SMT Project No. 80799

Sample Description: Visual Description:
Gray Cementitious Material
Sample #2
Undisturbed Shelby Tube Specimen:

Date Sampled: 10/23/95
Date Reported: 10/31/95

Date Tested: 10/27/95
Reviewed By: REV

RW

Test Standard: ASTM D 5084
Test By: DW

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

Length = 12.36 cm
Diameter = 7.16 cm
Moisture Content = 60.1%
Wet Density = 95.5 pcf
Dry Density = 59.7 pcf

Test Conditions

Back Pressure = 66.0 psi
Cell Pressure = 70.0 psi
Hydraulic Gradient = 10
Permeant Liquid: Air-less
Tap Water

Remarks:

Hydraulic Conductivity: $k_{20} = 5.8 \times 10^{-6}$ cm/sec

SOIL & MATERIAL TESTING, INC.

Thomas M. Kenney
Thomas M. Kenney



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CLIENT: Landfill Services Corporation

Date Sampled: 12/19/00

CLIENT'S SAMPLE ID: POSI-SHELL

Date sample received: 12/27/00

AES sample #: 001227AN01

Samples taken by: G.E./D.B.

Location: Chemung County

MATRIX: Solid Sample

grab

<u>PARAMETER PERFORMED</u>	<u>METHOD</u>	<u>RESULT</u>	<u>UNITS</u>	<u>NOTEBOOK REF</u>	<u>TEST DATE</u>
Flammability Potential	ASTM D 4982-95	Negative		TF-H-22	12/27/00



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CLIENT: Landfill Technologies, Inc.

Date Sampled: 07/24/95

CLIENT'S SAMPLE ID: POSI-SHELL (WET)

Date sample received: 07/24/95

AES sample #: 950724 001

Samples taken by: Dave Hansen

Location: Albany, NY

MATRIX: Product Test

grab

<u>PARAMETER PERFORMED</u>	<u>METHOD</u>	<u>RESULT</u>	<u>UNITS</u>	<u>NOTEBOOK REF</u>	<u>TEST DATE</u>
Paint Filter	SW-846	Negative		MC-X-8	07/24/95

APPROVED BY: Sara Denis
Report date: 07/26/95



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CHAIN OF CUSTODY RECORD

CLIENT NAME LANDFILL TECHNOLOGIES, INC	PROJECT NAME (Location)	SAMPLERS: (Names) DAVE HANSEN
ADDRESS	PO NUMBER	SAMPLERS: (Signature)

AES SAMPLE NUMBER	CLIENT SAMPLE IDENTIFICATION & LOCATION	DATE SAMPLED	TIME A.m. P.m.	SAMPLE TYPE			NUMBER OF CONT'S	ANALYSIS REQUIRED
				MATRIX	3 0 0	0 0 0		
950724001	POS1-SHELL(WET)	24 JUL 95	11:40	SL			1	Free Liquids Method 909: SW 846
				A				
				P				
				A				
				P				
				A				
				P				
				A				
				P				
				A				
				P				
				A				
				P				
				A				
				P				
				A				
				P				
				A				
				P				
				A				
				P				

Turnaround Time: 24 hour	Laboratory Approval:
Relinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature)
Relinquished by: (Signature)	Received by: (Signature)
Relinquished by: (Signature)	Received by: (Signature)
Dispatched by: (Signature)	Date/Time
Date/Time	Received for Laboratory by: <i>[Signature]</i>
Method of Shipment:	Send Report To:
	Client Phone No.:

The Laboratory reserves the right to return hazardous samples to the client or may levy an appropriate fee per container for disposal.

WHITE - Lab Copy

YELLOW - Sampler Copy

PINK - Generator Copy

Adirondack Environmental Services, Inc.

POSI-SHELL® TCLP ANALYSIS

The following table summarizes the TCLP results for the Posi-Shell mixture and its individual components.

COMPONENT	<u>Concentration, mg/l</u>							
	As	Ba	Cd	Cr	Pb	Hg	Se	Aq
Mineral Binder (CKD)	<0.5	0.38	0.02	<0.05	<0.5	<0.02	<0.1	<0.05
Posi-Pak® Fiber	<0.5	0.43	<0.01	<0.05	<0.5	<0.02	<0.1	<0.05
EarthTone Dye (Brown)	<0.5	0.34	0.02	<0.05	<0.5	<0.02	<0.1	<0.05
Posi-Shell mix (field - fresh)	<0.5	0.22	<0.01	<0.05	<0.5	<0.02	<0.1	<0.05
Posi-Shell mix (fresh - lab)	<0.5	0.30	<0.01	<0.05	<0.5	<0.02	<0.1	<0.05
Posi-Shell mix (one yr. old)	<0.5	0.08	<0.01	0.08	<0.5	<0.02	<0.1	<0.05
Regulatory Level	5.0	100.0	1.0	5.0	5.0	0.2	1.0	5.0



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CLIENT: Landfill Technologies, Inc.

Date Sampled: June 1992

CLIENT'S SAMPLE ID: IND CKD J92

Date sample received: 06/16/92

APS sample #: 920616 J01

Samples taken by: David Hansen

Location: Albany Landfil

MATRIX: solid waste

grab

<u>PARAMETER PERFORMED</u>	<u>METHOD</u>	<u>RESULT</u>	<u>UNITS</u>	<u>NOTEBOOK REF</u>	<u>TEST DAT</u>
TCLP Extraction	EPA-1311	Complete		EPT-D-4	06/19/9
Arsenic-TCLP Extract	EPA-6010	<0.5	mg/l	ICP-Y-18	07/01/9
Barium-TCLP Extract	EPA-6010	0.38	mg/l	ICP-Y-18	07/01/9
Cadmium-TCLP Extract	EPA-6010	0.02	mg/l	ICP-Y-18	07/01/9
Chromium-TCLP Extract	EPA-6010	<0.05	mg/l	ICP-Y-30B	07/18/9
Lead-TCLP Extract	EPA-6010	<0.5	mg/l	ICP-Y-18	07/01/9
Mercury-TCLP Extract	EPA-7470	<0.02	mg/l	MET-PAB-39	06/24/9
Selenium-TCLP Extract	EPA-6010	<0.1	mg/l	ICP-Y-18	07/01/9
Silver-TCLP Extract	EPA-6010	<0.05	mg/l	ICP-Y-18	07/01/9

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CLIENT: Landfill Technologies, Inc.

Date Sampled: June 1992

CLIENT'S SAMPLE ID: Fiber

Date sample received: 06/16/92

ARS sample #: 920616 J03

Samples taken by: David Hansen

Location: Albany Landfi

MATRIX: solid waste

grab

<u>PARAMETER PERFORMED</u>	<u>METHOD</u>	<u>RESULT</u>	<u>UNITS</u>	<u>NOTEBOOK REF</u>	<u>TEST DA</u>
TCLP Extraction	EPA-1311	Complete		EPT-D-4	06/19/
Arsenic-TCLP Extract	EPA-6010	<0.5	mg/l	ICP-Y-18	07/01/
Barium-TCLP Extract	EPA-6010	0.43	mg/l	ICP-Y-18	07/01/
Cadmium-TCLP Extract	EPA-6010	<0.01	mg/l	ICP-Y-18	07/01/
Chromium-TCLP Extract	EPA-6010	<0.05	mg/l	ICP-Y-30B	07/18/
Lead-TCLP Extract	EPA-6010	<0.5	mg/l	ICP-Y-18	07/01/
Mercury-TCLP Extract	EPA-7470	<0.02	mg/l	MET-PAB-39	06/24/
Selenium-TCLP Extract	EPA-6010	<0.1	mg/l	ICP-Y-18	07/01/
Silver-TCLP Extract	EPA-6010	<0.05	mg/l	ICP-Y-18	07/01/

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CLIENT: Landfill Technologies, Inc.

Date Sampled: June 1992

CLIENT'S SAMPLE ID: E-Tone

Date sample received: 06/16/92

AES sample #: 920616 J04

Samples taken by: David Hansen

Location: Albany Landfill

MATRIX: solid waste

grab

<u>PARAMETER PERFORMED</u>	<u>METHOD</u>	<u>RESULT</u>	<u>UNITS</u>	<u>NOTEBOOK REF</u>	<u>TEST DATE</u>
TCLP Extraction	EPA-1311	Complete		EPT-D-4	06/19/92
Arsenic-TCLP Extract	EPA-6010	<0.5	mg/l	ICP-Y-18	07/01/92
Barium-TCLP Extract	EPA-6010	0.34	mg/l	ICP-Y-18	07/01/92
Cadmium-TCLP Extract	EPA-6010	0.02	mg/l	ICP-Y-18	07/01/92
Chromium-TCLP Extract	EPA-6010	<0.05	mg/l	ICP-Y-30B	07/18/92
Lead-TCLP Extract	EPA-6010	<0.5	mg/l	ICP-Y-18	07/01/92
Mercury-TCLP Extract	EPA-7470	<0.02	mg/l	MET-PAB-39	06/24/92
Selenium-TCLP Extract	EPA-6010	<0.1	mg/l	ICP-Y-18	07/01/92
Silver-TCLP Extract	EPA-6010	<0.05	mg/l	ICP-Y-18	07/01/92

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CLIENT: Landfill Technologies, Inc.

Date Sampled: 06/16/92

CLIENT'S SAMPLE ID: PS-1 WP (POSI-SHELL, FIELD)

Date sample received: 06/16/92

APS sample #: 920616 J05

Samples taken by: David Hansen

Location: Albany Landfill

MATRIX: solid waste

grab

<u>PARAMETER PERFORMED</u>	<u>METHOD</u>	<u>RESULT</u>	<u>UNITS</u>	<u>NOTEBOOK REF</u>	<u>TEST DATE</u>
TCLP Extraction	EPA-1311	Complete		EPT-D-4	06/19/92
Arsenic-TCLP Extract	EPA-6010	<0.5	mg/l	ICP-Y-18	07/01/92
Barium-TCLP Extract	EPA-6010	0.22	mg/l	ICP-Y-18	07/01/92
Cadmium-TCLP Extract	EPA-6010	<0.01	mg/l	ICP-Y-18	07/01/92
Chromium-TCLP Extract	EPA-6010	<0.05	mg/l	ICP-Y-30B	07/18/92
Lead-TCLP Extract	EPA-6010	<0.5	mg/l	ICP-Y-18	07/01/92
Mercury-TCLP Extract	EPA-7470	<0.02	mg/l	MET-PAB-39	06/24/92
Selenium-TCLP Extract	EPA-6010	<0.1	mg/l	ICP-Y-18	07/01/92
Silver-TCLP Extract	EPA-6010	<0.05	mg/l	ICP-Y-18	07/01/92



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CLIENT: Landfill Technologies, Inc.

Date Sampled: 06/16/92

CLIENT'S SAMPLE ID: PS-1 WL (POSI-SHELL, LAB)

Date sample received: 06/16/92

APS sample #: 920616 J06

Samples taken by: David Hansen

Location: Albany Landfill

MATRIX: solid waste

grab

<u>PARAMETER PERFORMED</u>	<u>METHOD</u>	<u>RESULT</u>	<u>UNITS</u>	<u>NOTEBOOK REF</u>	<u>TEST DATE</u>
TCLP Extraction	EPA-1311	Complete		EPT-D-4	06/19/92
Arsenic-TCLP Extract	EPA-6010	<0.5	mg/l	ICP-Y-18	07/01/92
Barium-TCLP Extract	EPA-6010	0.30	mg/l	ICP-Y-18	07/01/92
Cadmium-TCLP Extract	EPA-6010	<0.01	mg/l	ICP-Y-18	07/01/92
Chromium-TCLP Extract	EPA-6010	<0.05	mg/l	ICP-Y-30B	07/18/92
Lead-TCLP Extract	EPA-6010	<0.5	mg/l	ICP-Y-18	07/01/92
Mercury-TCLP Extract	EPA-7470	<0.02	mg/l	MET-PAB-39	06/24/92
Selenium-TCLP Extract	EPA-6010	<0.1	mg/l	ICP-Y-18	07/01/92
Silver-TCLP Extract	EPA-6010	<0.05	mg/l	ICP-Y-18	07/01/92

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CLIENT: Landfill Technologies, Inc.

Date Sampled: June 1991

CLIENT'S SAMPLE ID: PS-1Y (PSI-SHELL, 1 YEAR OLD)

Date sample received: 06/16/92

AES sample #: 920616 J07

Samples taken by: David Hansen

Location: Albany Landfi

MATRIX: solid waste

grab

<u>PARAMETER PERFORMED</u>	<u>METHOD</u>	<u>RESULT</u>	<u>UNITS</u>	<u>NOTEBOOK REF</u>	<u>TEST DATE</u>
TCLP Extraction	EPA-1311	Complete		EPT-D-4	06/19/
Arsenic-TCLP Extract	EPA-6010	<0.5	mg/l	ICP-Y-18	07/01/
Barium-TCLP Extract	EPA-6010	0.08	mg/l	ICP-Y-18	07/01/
Cadmium-TCLP Extract	EPA-6010	<0.01	mg/l	ICP-Y-18	07/01/
Chromium-TCLP Extract	EPA-6010	0.08	mg/l	ICP-Y-308	07/18/
Lead-TCLP Extract	EPA-6010	<0.5	mg/l	ICP-Y-18	07/01/
Mercury-TCLP Extract	EPA-7470	<0.02	mg/l	MET-PAB-39	06/24/
Selenium-TCLP Extract	EPA-6010	<0.1	mg/l	ICP-Y-18	07/01/
Silver-TCLP Extract	EPA-6010	<0.05	mg/l	ICP-Y-18	07/01/

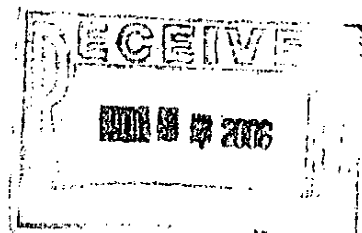
Adirondack Environmental Services, Inc.

Posi-Shell AF, 2 ton mix with portland



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July 13, 2006

Joel E. Lanz
Landfill Service Corporation
2183 Pennsylvania Avenue
Apalachin, NY 13732

Work Order No: 060630045

TEL: (607) 625-3050

FAX: (607) 625-2689

RE: Product testing

Dear Joel E. Lanz:

Adirondack Environmental Services, Inc received 3 samples on 6/30/2006 for the analyses presented in the following report.

There were no problems with the analyses and all associated QC met EPA or laboratory specifications, except if noted.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

A handwritten signature in black ink, appearing to read "Tara Daniels".

Tara Daniels
Laboratory Manager

ELAP#: 10709

AIHA#: 100307

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

X - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

T - Tentatively Identified Compound-Estimated Conc.

E - Value above quantitation range

Adirondack Environmental Services, Inc

Date: 13-Jul-06

CLIENT: Landfill Service Corporation
 Work Order: 060630045
 Project: Product testing
 PO#:

Client Sample ID: Posi-AF Petri#2
 Collection Date:
 Lab Sample ID: 060630045-002
 Matrix: SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
TCLP ICP METALS SW6010B/1311						Analyst: SM
(Prep: SW1311 - 7/5/2006)						
Aluminum-TCLP	< 1.0	1.0		mg/L	1	7/13/2006 1:18:00 PM
Antimony-TCLP	< 0.60	0.60		mg/L	1	7/13/2006 1:18:00 PM
Arsenic-TCLP	< 0.050	0.050		mg/L	1	7/13/2006 1:18:00 PM
Barium-TCLP	1.3	0.10		mg/L	1	7/13/2006 1:18:00 PM
Beryllium-TCLP	< 0.050	0.050		mg/L	1	7/13/2006 1:18:00 PM
Boron-TCLP	< 0.50	0.50		mg/L	1	7/13/2006 1:18:00 PM
Cadmium-TCLP	< 0.050	0.050		mg/L	1	7/13/2006 1:18:00 PM
Chromium-TCLP	0.16	0.050		mg/L	1	7/13/2006 1:18:00 PM
Cobalt-TCLP	< 0.50	0.50		mg/L	1	7/13/2006 1:18:00 PM
Copper-TCLP	< 0.050	0.050		mg/L	1	7/13/2006 1:18:00 PM
Iron-TCLP	< 0.50	0.50		mg/L	1	7/13/2006 1:18:00 PM
Lead-TCLP	< 0.050	0.050		mg/L	1	7/13/2006 1:18:00 PM
Magnesium-TCLP	< 0.50	0.50		mg/L	1	7/13/2006 1:18:00 PM
Manganese-TCLP	< 0.20	0.20		mg/L	1	7/13/2006 1:18:00 PM
Molybdenum-TCLP	< 0.10	0.10		mg/L	1	7/13/2006 1:18:00 PM
Nickel-TCLP	< 0.20	0.20		mg/L	1	7/13/2006 1:18:00 PM
Selenium-TCLP	< 0.050	0.050		mg/L	1	7/13/2006 1:18:00 PM
Silver-TCLP	< 0.10	0.10		mg/L	1	7/13/2006 1:18:00 PM
Thallium-TCLP	< 0.10	0.10		mg/L	1	7/13/2006 1:18:00 PM
Titanium-TCLP	< 0.10	0.10		mg/L	1	7/13/2006 1:18:00 PM
Vanadium-TCLP	< 0.20	0.20		mg/L	1	7/13/2006 1:18:00 PM
Zinc-TCLP	< 0.10	0.10		mg/L	1	7/13/2006 1:18:00 PM
Zirconium-TCLP	< 0.50	0.50		mg/L	1	7/13/2006 1:18:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 X - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 T - Tentatively Identified Compound-Estimated Conc.
 E - Value above quantitation range



ASSESSMENT OF COVER APPLICATION TO
REDUCE AIR EMISSIONS FROM HAZARDOUS
WASTE
LAIDLAW - CORUNNA FACILITY
SARNIA, ONTARIO

Project Number: 97-411
Date: December 22, 1997
Submitted By: Rowan Williams Davies & Irwin Inc.
Project Manager - Brian Handy, B.Sc., C. Chem.
Project Coordinator - Adam Quipp, DET
Principal - David Chadder, Hon. B.Sc., QEP

Submitted to: Mr. Blake Nesbitt
Laidlaw Environmental Services Limited

Rowan Williams
Davies & Irwin Inc.
Consulting Engineers
650 Woodlawn Road West
Guelph, Ontario
Canada N1K 1B8
Tel: (519) 823-1311
Fax: (519) 823-1316
Email: info@rwdi.com
Website: <http://www.rwdi.com>

TABLE OF CONTENTS

Page No.

1. INTRODUCTION	1
2. METHODOLOGY	2
2.1 Selected Target Compounds	2
2.2 Sampling Protocol	2
3. RESULTS	5
3.1 Sampling Results	5
3.1.1 Site Selection and Pre-Cover Application Sampling	5
3.1.2 One Day After Cover Application - July 24, 1997	8
3.1.3 Two Days After Cover Application - July 25, 1997	11
3.1.4 One Week After Cover Application - July 31, 1997	14
3.1.5 Two Weeks After Cover Application - August 7, 1997	17
3.1.6 Three Weeks After Cover Application - August 14, 1997	20
3.2 Summary of Results	23
4. CONCLUSIONS	26
5. REFERENCES	27

FIGURES

1. INTRODUCTION

Rowan Williams Davies & Irwin Inc. (RWDI) was retained by Laidlaw Environmental Services Limited (Laidlaw) to undertake an assessment of Posi-Shell, a cover material, to reduce air emissions of volatile organic compounds (VOC's), aldehydes, ketones and alcohols from the exposed waste at Laidlaw's Corunna Facility. Posi-Shell is described by its supplier as an aggregate of (recycled) cementitious mineral binder, liquid (water), recycled plastic and cellulose fibres. After curing, the cover is considered to provide a non-permeable cover over the exposed waste, minimising any chemical emissions.

The objectives of this study was to provide an independent assessment of the cover's ability to suppress odorous emissions up to three weeks after application.

The basic tasks undertaken in this study are described below:

- select three sampling locations on the exposed waste at the pit face of the landfill;
- determine the emission rate of target compounds, prior to application, using an isolation flux chamber;
- determine the emission rates of the target compounds one day, two days, one week, two weeks and three weeks after application; and
- assess the emission reduction efficiency of the foam.

2. METHODOLOGY

2.1 Selected Target Compounds

Table 1 presents the list of selected target compounds. The list was based on sampling and headspace analysis conducted by Laidlaw at three Test-Bucket locations on the landfill pit face (Pit Cell #17) during July 11 and 14, 1997 [1]. Figure 1 shows a site map with the three sample locations. Shows a site plan of the facility including the three sample locations. The list represents a cross-section of contaminants that are common to the waste stream at the Corunna facility.

Table 1: List of Target Compounds.

Acetone	o-Xylene
Benzene	p-m-Xylene
Butanediol	Propanal
1-Butanol	Propanol
2-Butanol	Styrene
Butenal	Tetrachlorethylene
Chlorobenzene	1,3,5-Trimethyl Benzene
Cyclohexane	1,2,4-Trimethyl Benzene
Ethyl Benzene	1,2,3-Trimethyl Benzene
Heptane	Toluene
Methyl Ethyl Ketone	Acetaldehyde
2-Methyl Hexane	Difuro-Furan
3-Methyl Hexane	Dichloromethane
Methyl Isobutyl Ketone	Ethanol
Methyl Pentanone	Methyl Butanol

2.2 Sampling Protocol

In the original work plan submitted by RWDI to Laidlaw, it was proposed to conduct continuous VOC measurements over the surface of the pit face, using a PhotoVac Microfid Model MP 1001, in order to select locations with significant emissions which were also safely accessible. These measurements were conducted on July 22, 1997; however, they proved to be inconclusive in locating areas of peak emissions because of relatively low and uniform VOC concentrations above

the pit face. Therefore, it was decided to locate the sampling points in close proximity to the existing Laidlaw Test-Drum locations (see Section 2.1).

The flux chamber was then used to collect samples at these three locations. The flux chamber is shown schematically in Figure 2. It was constructed according to the designer's specifications [2]. The chamber is 71 cm in diameter and 31 cm high and is constructed of 14 gauge stainless steel. All interior and exterior fittings were stainless steel and all lines were made from Teflon tubing. The chamber was equipped with five exit ports (labelled A to E in Figure 2), air and waste temperature probes and a chamber differential pressure gauge. The flux chamber was placed on the surface of the waste and the bottom edge of the chamber was forced a short depth into the waste surface. The interface between the chamber and the surface was covered with common sand to provide the best seal possible. The flux chamber was operated under a slight positive pressure to further prevent outside air entering underneath and into the chamber.

The flux chamber was operated within parameters recommended by the designers [2]. The flux chamber was purged with ultra-high purity nitrogen gas for a minimum of 30 minutes at a rate of 17 l/min ($2.83 \times 10^{-4} \text{ m}^3/\text{s}$). This removed any residual outside air present in the chamber after it was placed on the surface of the waste. The purpose of diluting the chamber air was to establish an equilibrium between gas emissions from the sample surface and the sweep gas entering the chamber. The purge gas was introduced into the flux chamber using Teflon tubing equipped with fifteen, 0.635 mm diameter, downward-facing vent holes. The flow of purge gas (sweep rate) was regulated using a Matheson rotameter, which was calibrated using a Gilibrator automated bubble meter, which is a primary standard airflow calibrator. The total amount of purged gas introduced into the chamber was such that about 99% of the original air was purged from the flux chamber. Once the flux chamber had been purged, samples were drawn from the chamber through the exhaust port using a sample train consisting of a vacuum pump and a calibrated mass flow controller. The samples were collected by on a multi-phase carbon adsorbent TOI tubes with Tenax provided by Laidlaw Environmental. The on-site Laidlaw laboratory conducted the analysis for the compounds shown in Table 1.

The concentration for each compound, C , was determined using Equation 1:

$$C = M/V \quad (1)$$

where: C = VOC concentration (ng/m^3);

M = mass on tube (ng); and

V = total volume of air sampled (m^3).

The emission flux rate ($\text{ng}/\text{m}^2/\text{s}$) was determined using Equation 2:

$$E = \frac{C \cdot Q}{A} \quad (2)$$

where: E = VOC flux rate ($\text{ng}/\text{m}^2/\text{s}$);

Q = sweep rate of nitrogen into the flux chamber = $2.83 \times 10^{-4} \text{ m}^3/\text{s}$; and

A = surface area enclosed by the flux chamber = 0.40 m^2 .

The flux chamber requires low wind speeds to sample properly. Strong winds may create a region of low pressure on the downwind side of the flux chamber. Winds were light during the flux chamber sampling and no provisions for wind breaks were required.

3. RESULTS

3.1 Sampling Results

The site selection and initial sampling, before cover application, was carried out on July 22, 1997. Covering of the pit face (approximately 90% of the exposed waste) was carried out by the supplier, Landfill Service Corporation, on July 23. After the cover was applied and the curing process was underway, sampling was repeated one day (July 24), two days (July 25), one week (July 31), two weeks (August 7) and three weeks (August 14) after covering. Sections 3.1.1 to 3.1.6 presents pertinent sampling information and the results. Section 3.2 presents a summary of the results and emission reduction efficiency. All field note information taken during the study have been included in summary tables. All times are given in Eastern Daylight (Savings) Time (EDT).

3.1.1 Site Selection and Pre-Cover Application Sampling

Sample site selection and sampling prior to cover application was conducted on July 22. Table 2 presents a description of the sampling site locations.

Table 2: Sampling Locations.

Sample Number	Location
Site 1	Two metres west of Laidlaw Test-Bucket #3
Site 2	Two metres west of Laidlaw Test-Bucket #2
Site 3	½-metre south of Laidlaw Test-Bucket #1

The sampling parameters (start time, end time, etc.) are presented in Table 3.

Table 3: Sampling Parameters - July 22, 1997.

Parameter	Site 1	Site 2	Site 3
Purge Start (hours)	1355	1455	1552
Sweep Rate (l/min)	17.2	17.2	17.2
Sample Start (hours)	1436	1531	1629
Sample End (hours)	1451	1548	1644
Sample Flow Rate (ml/min)	300	300	300
Internal Pressure ("H ₂ O)	0.055	0.050	0.050
Waste Temperature (C)	31	31	36
Ambient Temperature (C)	25	25	27
Wind Speed (m/s)	2.0	2.8	3.0
Weather Conditions	Sunny/Clear	Sunny/Clear	Sunny/Clear
Sample Tube Number	D	B	E

Table 4 presents the pre-cover sampling results. The table shows the emission rate in ng/m²/s for the target compounds at each sampling location.

Table 4: Pre-Cover Initial Sampling Results - July 22, 1997.

Target Compound	Emission Rate (ng/m ² /s)		
	Site 1	Site 2	Site 3
Acetone	11.8	2.61	14.5
Benzene	0.80	0.58	0.96
1-Butanol	0.64	0.00	1.44
Butanediol	5.58	0.00	18.8
2-Butanol	0.00	0.00	1.91
Butenal	0.48	0.00	0.48
Chlorobenzene	0.16	0.00	0.48
Cyclohexane	0.48	0.00	0.48
Ethyl Benzene	4.62	0.73	3.99
Heptane	0.00	0.00	0.80
Methyl Ethyl Ketone	0.48	1.31	4.15
2-Methyl Hexane	0.00	0.00	0.32
3-Methyl Hexane	0.16	0.00	0.64
Methyl Isobutyl Ketone	2.55	1.31	3.20
Methyl Pentanone	2.55	0.00	0.00
o-Xylene	0.96	0.00	0.00
p,m-Xylene	7.81	1.74	14.8
Propanal	0.00	0.00	7.81
Propanol	0.00	0.00	0.00
Styrene	6.86	1.31	5.74
Tetrachlorethylene	0.48	0.00	10.7
1,3,5-Trimethyl Benzene	0.48	0.00	3.51
1,2,4-Trimethyl Benzene	1.12	0.00	1.43
1,2,3-Trimethyl Benzene	1.12	0.00	2.39
Toluene	13.6	5.51	15.6
Acetaldehyde	0.00	0.00	0.00
Difuro-Furan	0.00	0.00	0.00
Dichloromethane	0.00	0.00	0.00
Ethanol	0.00	0.00	0.00
Methyl Butanol	0.00	0.00	0.00

The table shows that there is some variability between sample sites. This is especially noticeable at sampling Site 2, which generally shows much lower emission rates than the other two sites. Some species predominate in the emissions, for example, acetone, butanediol, ethyl benzene, methyl ethyl ketone, methyl isobutyl ketone, xylene, styrene, tetrachloroethylene and toluene.

3.1.2 One Day After Cover Application - July 24

Cover was applied to the waste material on July 23. Approximately 90% of the pit face was covered. The cover had "cured" to a stable surface by July 24, but it was still wet in spots and the cover appeared to be thin in various locations. It also had a distinct odour. Table 5 presents a description of the cover at the three sampling locations.

Table 5: Description of Sampling Locations on July 24.

Sampling Location	Description
Site 1	<ul style="list-style-type: none"> - Even grey colour - No surface cracks - Approximately 2 cm. thick
Site 2	<ul style="list-style-type: none"> - 10% grey, 90% lime green colour - Approximately 5% of surface cracked - Approximately 1.5 cm. thick
Site 3	<ul style="list-style-type: none"> - 90% grey, 5% green colour - No surface cracks - Approximately 1.5 cm. thick

Table 6 presents the sampling parameters on July 24.

Table 6: Sampling Parameters - July 24

Parameter	Site 1	Site 2	Site 3
Purge Start (hours)	0850	1027	1203
Sweep Rate (l/min)	17.2	17.2	17.2
Sample Start (hours)	0924	1057	1235
Sample End (hours)	1024	1200	1335
Sample Flow Rate (ml/min)	300	300	300
Internal Pressure ("H ₂ O)	0.050	0.045	0.040
Waste Temperature (C)	20	23	23
Ambient Temperature (C)	20	21	23
Wind Speed (m/s)	1.8	2.6	1.8
Weather Conditions	Overcast	Overcast	Overcast
Sample Tube Number	F	B	E

Table 7 presents the sampling results for July 24, 1997, one day after cover application. The table shows the emission rate in ng/m²/s for the target compounds at each sampling location.

Table 7: Sampling Results - July 24, 1997.

Target Compound	Emission Rate (ng/m ² /s)		
	Site 1	Site 2	Site 3
Acetone	1.28	4.32	6.20
Benzene	0.20	0.36	0.00
1-Butanol	0.20	0.24	0.84
Butanediol	1.48	3.56	0.12
2-Butanol	0.44	0.00	0.40
Butenal	0.00	0.00	0.00
Chlorobenzene	0.00	0.08	0.08
Cyclohexane	0.00	0.00	0.00
Ethyl Benzene	0.20	1.56	0.24
Heptane	0.00	0.00	0.00
Methyl Ethyl Ketone	0.64	1.40	1.92
2-Methyl Hexane	0.00	0.00	0.00
3-Methyl Hexane	0.00	0.00	0.00
Methyl Isobutyl Ketone	0.24	1.76	0.36
Methyl Pentanone	0.00	0.00	0.00
o-Xylene	0.00	0.00	0.00
p,m-Xylene	0.16	3.96	0.40
Propanal	0.00	0.00	0.00
Propanol	0.00	0.00	0.40
Styrene	0.20	4.44	0.24
Tetrachlorethylene	0.00	0.24	0.28
1,3,5-Trimethyl Benzene	0.00	0.40	0.16
1,2,4-Trimethyl Benzene	0.00	0.12	0.72
1,2,3-Trimethyl Benzene	0.00	0.24	0.20
Toluene	0.60	8.44	0.84
Acetaldehyde	1.08	0.00	0.00
Difuro-Furan	0.00	1.16	0.00
Dichloromethane	0.00	0.00	0.00
Ethanol	0.00	0.00	0.00
Methyl Butanol	0.00	0.00	8.88

The table shows that, similar to the results on July 22, emissions of some species predominate; however, in general, the emissions rates are greatly reduced. Table 8 shows the percent reduction in the emission rates from July 22 to July 24.

Table 8: Percent Reduction In Emission Rates from July 22 to July 24.

Target Compound	Emission Rate Reduction (%)		
	Site 1	Site 2	Site 3
Acetone	89.2	-65.6	57.3
Benzene	74.9	37.9	100.0
1-Butanol	68.6	NA	41.5
Butanediol	73.5	NA	99.4
2-Butanol	NA	NA	79.1
Butenal	100.0	NA	100.0
Chlorobenzene	100.0	NA	83.3
Cyclohexane	100.0	NA	100.0
Ethyl Benzene	95.7	-115.2	94.0
Heptane	NA	NA	100.0
Methyl Ethyl Ketone	-33.8	-7.3	53.7
2-Methyl Hexane	NA	NA	100.0
3-Methyl Hexane	100.0	NA	100.0
Methyl Isobutyl Ketone	90.6	-34.9	88.7
Methyl Pentanone	100.0	NA	NA
o-Xylene	100.0	NA	NA
p,m-Xylene	98.0	-127.7	97.3
Propanal	NA	NA	100.0
Propanol	NA	NA	NA
Styrene	97.1	-240.3	95.8
Tetrachlorethylene	100.0	NA	88.6
1,3,5-Trimethyl Benzene	100.0	NA	95.4
1,2,4-Trimethyl Benzene	100.0	NA	49.8
1,2,3-Trimethyl Benzene	100.0	NA	91.6
Toluene	95.6	-53.2	94.6
Acetaldehyde	NA	NA	NA
Difuro-Furan	NA	NA	NA
Dichloromethane	NA	NA	OA
Ethanol	NA	NA	NA
Methyl Butanol	NA	NA	NA
Average	87.5	-75.8	86.8
NA: Emission Rate Below Detection Level			

The table shows that, on average, the emission rates are reduced by 87.5% at Site 1 and 86.8% at Site 3. However, Site 2 shows some anomalous results, where the emission rates actually increased by 75.8%. The reason for this is unclear, but the surface at Site 2 was found to be different in appearance than at Sites 1 or 3 (i.e., large surface cracks and lime green in colour as opposed to grey at the other locations). It may also be due to the low initial sampling results, which may have been a sampling anomaly.

3.1.3 Two Days After Cover Application - July 25

Table 9 presents the sampling parameters on July 25.

Table 9: Sampling Parameters - July 25.

Parameter	Site 1	Site 2	Site 3
Purge Start (hours)	1015	1150	1327
Sweep Rate (l/min)	17.2	17.2	17.2
Sample Start (hours)	1048	1223	1403
Sample End (hours)	1148	1324	1508
Sample Flow Rate (ml/min)	300	300	300
Internal Pressure ($\text{cm H}_2\text{O}$)	0.08	0.06	0.09
Waste Temperature (C)	24	31	36
Ambient Temperature (C)	24	25	28
Wind Speed (m/s)	0.5	1.7	1.6
Weather Conditions	Foggy	Sunny/Hot	Sunny/Hot
Sample Tube Number	E	D	F

The cover cover appeared to be slightly harder and exhibited less odour. Table 10 presents the sampling results for July 25, 1997, two days after cover application. The table shows the emission rate in $\text{ng/m}^2/\text{s}$ for the target compounds at each sampling location. The internal chamber pressures were found to be higher than recommended by the designer. Correction factors, supplied by the designers, were applied to the emission rates to account for this slight overpressure condition.

Table 10: Sampling Results - July 25, 1997.

Target Compound	Emission Rate (ng/m ³ /s)		
	Site 1	Site 2	Site 3
Acetone	7.91	4.41	10.03
Benzene	0.70	0.32	0.55
1-Butanol	0.61	0.00	0.99
Butanediol	0.00	1.81	26.12
2-Butanol	0.00	0.00	0.22
Butenal	0.17	0.24	0.00
Chlorobenzene	0.17	0.08	0.33
Cyclohexane	0.00	0.00	0.00
Ethyl Benzene	0.35	1.38	0.55
Heptane	0.00	0.24	0.00
Methyl Ethyl Ketone	0.17	0.20	0.11
2-Methyl Hexane	0.00	0.12	0.00
3-Methyl Hexane	0.00	0.00	0.00
Methyl Isobutyl Ketone	0.87	1.50	1.21
Methyl Pentanone	0.26	1.14	4.96
o-Xylene	0.00	0.00	0.55
p-m-Xylene	0.44	3.11	1.43
Propanal	0.00	0.00	0.00
Propanol	0.00	0.00	5.29
Styrene	0.44	4.68	0.00
Tetrachlorethylene	0.00	0.51	1.43
1,3,5-Trimethyl Benzene	0.00	0.32	0.00
1,2,4-Trimethyl Benzene	0.00	0.71	0.00
1,2,3-Trimethyl Benzene	0.00	0.39	0.00
Toluene	1.30	7.79	2.75
Acetaldehyde	5.13	0.00	6.50
Difuro-Furan	0.00	0.00	0.00
Dichloromethane	0.00	0.63	0.00
Ethanol	0.00	0.00	7.72
Methyl Butanol	0.00	0.00	0.00

Similar to the previous days sampling results, the emission rates are still greatly reduced compared to the pre-covering results on July 22. Table 11 shows the percent reduction in the emission rates from July 22 to July 25.

Table 11: Percent Reduction In Emission Rates from July 22 to July 25.

Target Compound	Emission Rate Reduction (%)		
	Site 1	Site 2	Site 3
Acetone	32.9	-68.9	76.8
Benzene	12.7	45.7	80.7
1-Butanol	4.6	NA	76.8
Butanediol	99.9	NA	53.5
2-Butanol	NA	NA	96.1
Butenal	63.6	NA	99.9
Chlorobenzene	NA	NA	76.8
Cyclohexane	99.9	NA	99.9
Ethyl Benzene	92.5	-90.0	95.4
Heptane	NA	NA	99.9
Methyl Ethyl Ketone	63.6	84.9	99.1
2-Methyl Hexane	NA	NA	99.9
3-Methyl Hexane	99.9	NA	99.9
Methyl Isobutyl Ketone	65.9	-14.6	87.3
Methyl Pentanone	89.8	NA	NA
o-Xylene	99.9	NA	NA
p,m-Xylene	94.4	-78.7	96.8
Propanal	NA	NA	99.9
Propanol	NA	NA	NA
Styrene	93.7	-258.9	99.9
Tetrachlorethylene	99.9	NA	95.5
1,3,5-Trimethyl Benzene	99.9	NA	99.9
1,2,4-Trimethyl Benzene	99.9	NA	99.9
1,2,3-Trimethyl Benzene	99.9	NA	99.9
Toluene	95.6	-41.4	94.1
Acetaldehyde	NA	NA	NA
Difuro-Furan	NA	NA	NA
Dichloromethane	NA	NA	NA
Ethanol	NA	NA	NA
Methyl Butanol	NA	NA	NA
Average	75.3	-52.7	82.3
NA: Emission Rate Below Detection Level			

The table shows that at Sites 1 and 2, the average reduction in the emission rates has decreased slightly (i.e., 87.5% to 75.3% at Site 1 and 86.8% to 82.3.8% at Site 2. This slight decrease may be due to the fact that any suppression of emissions due to moisture is absent as the waste and cover dries out and the fact that the cover has not yet completely cured, statistical variations in the analysis, or because of additional curing of the cover producing a more impervious surface. Site 2 still shows anomalous results with an increase in the average emission rate; however, the increase was slightly smaller (i.e., 52.7% , down from 75.8%) then was found after first day

(post-cover).

3.1.4 One Week After Cover Application - July 31

Table 12 presents the sampling parameters on July 31.

Table 12: Sampling Parameters - July 31.

Parameter	Site 1	Site 2	Site 3
Purge Start (hours)	1020	1155	1328
Sweep Rate (l/min)	17.2	17.2	17.2
Sample Start (hours)	1040	1225	1353
Sample End (hours)	1140	1325	1453
Sample Flow Rate (ml/min)	300	300	300
Internal Pressure ("H ₂ O)	0.04	0.06	0.06
Waste Temperature (C)	31	40	42
Ambient Temperature (C)	23	26	28
Wind Speed (m/s)	1.0	1.7	2.0
Weather Conditions	Sunny	Sunny/Hot	Sunny/Hot
Sample Tube Number	C	D	E

The cover surface was noticeably harder, with very little odour. Also no additional cracking of the surface was evident. Table 13 presents the sampling results for July 31, 1997, one week after cover application. The table shows the emission rate in ng/m³/s for the target compounds at each sampling location.

Table 13: Sampling Results - July 31, 1997.

Target Compound	Emission Rate (ng/m ³ /s)		
	Site 1	Site 2	Site 3
Acetone	4.92	5.08	10.92
Benzene	0.40	0.08	2.76
1-Butanol	0.28	0.00	1.96
Butanediol	0.00	0.00	0.00
2-Butanol	0.40	0.00	0.24
Butenal	0.00	0.00	0.52
Chlorobenzene	0.00	0.00	0.00
Cyclohexane	0.00	0.00	0.00
Ethyl Benzene	1.56	0.00	0.12
Heptane	0.00	0.00	0.00
Methyl Ethyl Ketone	2.44	0.00	0.12
2-Methyl Hexane	0.00	0.00	0.00
3-Methyl Hexane	0.00	0.00	0.00
Methyl Isobutyl Ketone	1.20	0.00	0.44
Methyl Pentanone	0.00	0.00	0.00
o-Xylene	0.00	0.00	0.12
p,m-Xylene	1.56	0.00	0.36
Propenal	0.00	0.00	0.00
Propanol	0.00	0.00	0.00
Styrene	1.56	0.00	0.00
Tetrachlorethylene	0.28	0.08	0.40
1,3,5-Trimethyl Benzene	0.00	0.00	0.00
1,2,4-Trimethyl Benzene	0.00	0.00	0.00
1,2,3-Trimethyl Benzene	0.00	0.00	0.00
Toluene	4.04	0.08	0.84
Acetaldehyde	0.00	0.00	0.00
Difuro-Furan	0.00	0.00	0.00
Dichloromethane	0.76	2.52	0.00
Ethanol	0.00	0.00	0.00
Methyl Butanol	7.60	0.00	0.16

The results show that, although the cover surface had appeared to have undergone additional curing, the emission rates have increased for the majority of compounds compared to the measurements conducted a week ago on July 25. However, emissions from Site 2 have significantly decreased. This is also evident in Table 14, which shows the percent reduction in the emission rates from July 22 to July 31.

Table 14: Percent Reduction In Emission Rates from July 22 to July 31.

Target Compound	Emission Rate Reduction (%)		
	Site 1	Site 2	Site 3
Acetone	58.3	-94.7	24.7
Benzene	49.8	86.2	-188.5
1-Butanol	56.1	NA	-36.6
Butanediol	73.5	NA	99.9
2-Butanol	NA	NA	87.5
Butenal	99.9	NA	-8.7
Chlorobenzene	99.9	NA	99.9
Cyclohexane	99.9	NA	99.9
Ethyl Benzene	66.3	99.9	97.0
Heptane	NA	NA	99.9
Methyl Ethyl Ketone	-410.1	99.9	97.1
2-Methyl Hexane	NA	NA	99.9
3-Methyl Hexane	99.9	NA	99.9
Methyl Isobutyl Ketone	53.0	99.9	86.2
Methyl Pentanone	99.9	NA	NA
o-Xylene	99.9	NA	NA
p-m-Xylene	80.0	99.9	97.6
Propanal	NA	NA	99.9
Propanol	NA	NA	NA
Styrene	77.2	99.9	99.9
Tetrachlorethylene	41.5	NA	96.3
1,3,5-Trimethyl Benzene	99.9	NA	99.9
1,2,4-Trimethyl Benzene	99.9	NA	99.9
1,2,3-Trimethyl Benzene	99.9	NA	99.9
Toluene	70.2	98.5	94.6
Acetaldehyde	NA	NA	NA
Difuro-Furan	NA	NA	NA
Dichloromethane	NA	NA	NA
Ethanol	NA	NA	NA
Methyl Butanol	NA	NA	NA
Average	55.7	73.7	70.3
NA: Emission Rate Below Detection Level			

The table shows that the average reduction in the emission rate has changed from 75.3% on July 25 to 55.7% on July 31 at Site 1. Similarly, at Site 3, the average emission rate has changed from 82.3% on July 25 to 70.3% on July 31. However, the emission rate at Site 2 is now comparable to the other sites with an emission rate reduction, compared to the initial measurements on July 22 of 73.7%. The reason for the slight increase in the emissions at Sites 2 and 3 is unclear. There was no indication from observation of the cover surface that deterioration had taken place. In fact, the surface was found to be harder and looked more likely to be less permeable. Therefore, the

difference may be due to just statistical variation in the analysis from sample to sample. There is also no explanation in the results from Site 2, as again there was no evidence of change in the cover surface at this location.

3.1.5 Two Weeks After Cover Application - August 7

Table 15 presents the sampling parameters on August 7.

Table 15: Sampling Parameters - August 7.

Parameter	Site 1	Site 2	Site 3
Purge Start (hours)	0910	1122	1303
Sweep Rate (l/min)	17.2	17.2	17.2
Sample Start (hours)	1020	1153	1344
Sample End (hours)	1120	1301	1444
Sample Flow Rate (ml/min)	300	300	300
Internal Pressure (H_2O)	0.02	0.04	0.03
Waste Temperature (C)	22	30	30
Ambient Temperature (C)	24	26	26
Wind Speed (m/s)	1.5	2.5	2.0
Weather Conditions	Sunny	Sunny/Hot	Sunny/Hot
Sample Tube Number	B	D	F

There was little change in the cover surface from that observed on July 31. A few cracks had appeared, but they were relatively small. Table 16 presents the sampling results for August 7, two weeks after cover application. The table shows the emission rate in $\text{ng}/\text{m}^2/\text{s}$ for the target compounds at each sampling location.

Table 16: Sampling Results - August 7.

Target Compound	Emission Rate (ng/m ³ /s)		
	Site 1	Site 2	Site 3
Acetone	1.84	6.60	6.04
Benzene	0.12	0.00	0.20
1-Butanol	0.12	0.00	0.20
Butanediol	0.00	0.00	0.00
2-Butanol	0.00	0.36	0.56
Butenal	0.00	0.00	0.00
Chlorobenzene	0.00	0.00	0.00
Cyclohexane	0.00	0.00	0.00
Ethyl Benzene	0.52	2.36	0.20
Heptane	0.00	0.32	0.00
Methyl Ethyl Ketone	0.76	0.00	2.32
2-Methyl Hexane	0.00	0.00	0.00
3-Methyl Hexane	0.00	0.00	0.00
Methyl Isobutyl Ketone	0.44	2.20	0.44
Methyl Pentanone	0.00	0.00	0.00
o-Xylene	0.00	0.00	0.20
p-m-Xylene	0.60	5.32	0.68
Propanal	0.00	0.00	0.00
Propanol	0.00	0.00	0.00
Styrene	0.36	4.84	0.00
Tetrachlorethylene	0.16	0.68	0.64
1,3,5-Trimethyl Benzene	0.00	0.56	0.00
1,2,4-Trimethyl Benzene	0.00	0.48	0.00
1,2,3-Trimethyl Benzene	0.00	0.00	0.00
Toluene	2.40	10.12	1.68
Acetaldehyde	0.00	0.00	0.00
Difuro-Furan	0.00	0.00	0.00
Dichloromethane	0.32	1.36	0.00
Ethanol	0.00	0.00	0.00
Methyl Butanol	1.04	5.40	1.64

The emission rates in Table 16 are similar to the emission rates measured on July 24 and 25. Therefore it appears that the results on July 31 may have been an anomaly. This is evident in Table 17, which shows the percent reduction in the emission rates from July 22 to August 7.

Table 17: Percent Reduction In Emission Rates from July 22 to August 7.

Target Compound	Emission Rate Reduction (%)		
	Site 1	Site 2	Site 3
Benzene	84.9	99.9	79.1
1-Butanol	81.2	NA	86.1
Butanediol	99.9	NA	99.9
2-Butanol	NA	NA	70.7
Butenal	99.9	NA	99.9
Chlorobenzene	99.9	NA	99.9
Cyclohexane	99.9	NA	99.9
Ethyl Benzene	88.8	-225.6	95.0
Heptane	NA	NA	99.9
Methyl Ethyl Ketone	-58.9	99.9	44.0
2-Methyl Hexane	NA	NA	99.9
3-Methyl Hexane	99.9	NA	99.9
Methyl Isobutyl Ketone	82.8	-68.6	86.2
Methyl Pentanone	99.9	NA	NA
o-Xylene	99.9	NA	NA
p,m-Xylene	92.3	-205.9	95.4
Propanal	NA	NA	99.9
Propanol	NA	NA	NA
Styrene	94.7	-271.0	99.9
Tetrachlorethylene	66.6	NA	94.0
1,3,5-Trimethyl Benzene	99.9	NA	99.9
1,2,4-Trimethyl Benzene	99.9	NA	99.9
1,2,3-Trimethyl Benzene	99.9	NA	99.9
Toluene	82.3	-83.7	89.2
Acetaldehyde	NA	NA	NA
Difuro-Furan	NA	NA	NA
Dichloromethane	NA	NA	NA
Ethanol	NA	NA	NA
Methyl Butanol	NA	NA	NA
Average	84.9	-101.0	90.8
NA: Emission Rate Below Detection Level			

The table shows that the average reduction in the emission rate is similar to the reductions measured on July 24 and 25. The average emission rate reduction at Site 1 was 84.9%, compared to 87.5% on July 24, 88.3% on July 25 and 55.7% on August 7. At Site 3, the average emission rate reduction was 90.8%, compared to 86.8% on July 24, 92.2% on July 25 and 70.3% on July 31. However, the average emission rate at Site 2 is again showing an increase compared to the original measurements on July 22. Therefore, it appears that the measurements conducted on July 31 were anomalous.

3.1.6 Three Weeks After Cover Application - August 14

Table 18 presents the sampling parameters on August 14.

Table 18: Sampling Parameters - August 14.

Parameter	Site 1	Site 2	Site 3
Purge Start (hours)	1030	1225	1400
Sweep Rate (l/min)	17.2	17.2	17.2
Sample Start (hours)	1122	1256	1344
Sample End (hours)	1222	1356	1444
Sample Flow Rate (ml/min)	300	300	300
Internal Pressure ("H ₂ O)	0.025	0.05	0.045
Waste Temperature (C)	24	29	30
Ambient Temperature (C)	25	25	26
Wind Speed (m/s)	2.5	2.7	2.5
Weather Conditions	Sunny	Sunny/Hot	Sunny/Hot
Sample Tube Number	D	E	F

Similar to the observations made on August 7, there was little change in the cover surface. Table 19 presents the sampling results for August 14, three weeks after cover application. The table shows the emission rate in ng/m²/s for the target compounds at each sampling location.

Table 19: Sampling Results - August 14.

Target Compound	Emission Rate (ng/m ² /s)		
	Site 1	Site 2	Site 3
Acetone	0.36	3.12	4.76
Benzene	0.08	0.36	0.16
1-Butanol	0.00	0.00	0.28
Butanediol	0.00	0.00	0.00
2-Butanol	0.20	0.00	1.24
Butenal	0.00	0.68	0.20
Chlorobenzene	0.00	0.00	0.00
Cyclohexane	0.00	0.00	0.00
Ethyl Benzene	0.04	1.84	0.08
Heptane	0.00	0.00	0.00
Methyl Ethyl Ketone	0.20	0.96	2.16
2-Methyl Hexane	0.00	0.00	0.00
3-Methyl Hexane	0.00	0.00	0.00
Methyl Isobutyl Ketone	0.16	1.08	0.32
Methyl Pentanone	0.00	0.00	0.00
o-Xylene	0.00	0.00	0.00
p,m-Xylene	0.08	3.16	0.16
Propanal	0.00	0.00	0.00
Propanol	0.00	0.00	0.00
Styrene	0.00	2.88	0.08
Tetrachlorethylene	0.00	0.28	0.00
1,3,5-Trimethyl Benzene	0.00	0.00	0.00
1,2,4-Trimethyl Benzene	0.00	0.00	0.00
1,2,3-Trimethyl Benzene	0.00	0.00	0.00
Toluene	0.20	7.20	0.48
Acetaldehyde	0.00	0.00	0.00
Difuro-Furan	0.00	0.00	0.00
Dichloromethane	0.00	1.12	0.00
Ethanol	0.00	0.00	0.00
Methyl Butanol	0.36	4.84	12.96

The emission rates in Table 19 are similar to the emission rates measured the previous week on August 7. In fact, with the exception of methyl butanol at Site 3, the emission rates are all slightly lower. This is also shown in Table 20, which presents the percent reduction in the emission rates from July 22 to August 17.

Table 20: Percent Reduction In Emission Rates from July 22 to August 14.

Target Compound	Emission Rate Reduction (%)		
	Site 1	Site 2	Site 3
Acetone	96.9	-19.6	67.2
Benzene	90.0	37.9	83.3
1-Butanol	99.9	NA	80.5
Butanediol	99.9	NA	99.9
2-Butanol	NA	NA	35.2
Butenal	99.9	NA	58.2
Chlorobenzene	99.9	NA	99.9
Cyclohexane	99.9	NA	99.9
Ethyl Benzene	99.1	-153.9	98.0
Heptane	NA	NA	99.9
Methyl Ethyl Ketone	58.2	26.4	47.9
2-Methyl Hexane	NA	NA	99.9
3-Methyl Hexane	99.9	NA	99.9
Methyl Isobutyl Ketone	93.7	17.2	90.0
Methyl Pentanone	99.9	NA	NA
o-Xylene	99.9	NA	NA
p-m-Xylene	99.0	-81.7	98.9
Propanal	NA	NA	99.9
Propanol	NA	NA	NA
Styrene	99.9	-120.8	98.6
Tetrachlorethylene	99.9	NA	99.9
1,3,5-Trimethyl Benzene	99.9	NA	99.9
1,2,4-Trimethyl Benzene	99.9	NA	99.9
1,2,3-Trimethyl Benzene	99.9	NA	99.9
Toluene	98.5	-30.7	96.9
Acetaldehyde	NA	NA	NA
Difuro-Furan	NA	NA	NA
Dichloromethane	NA	NA	NA
Ethanol	NA	NA	NA
Methyl Butanol	NA	NA	NA
Average	96.7	-40.6	88.8
NA: Emission Rate Below Detection Level			

The table shows similar results to the previous weeks measurements at Sites 1 and 3. There was a slight improvement at Site 1 where the average reduction increased from 84.9% to 96.7%. At Site 2 the average reduction dropped from 90.8 % to 88.8%, primarily due to the increased emissions of methyl butanol. Site 2 showed the similar emissions increase compared to the initial measurements on July 22.

3.2 Summary of Results

Table 21 presents a summary of the percent reduction in emissions for selected compounds during all five sampling periods. Compounds that were not detected during any of the sampling periods (e.g., dichloromethane, ethanol, etc.) were omitted from the table. Summary results for Site 2 have not been presented due to the anomalous nature of the data. It is suspected that the anomalous results from Site 2 were due to either poor application of cover at this location (see Table 5, Section 3.1.2) or a chemical reaction between the cover and the waste.

Table 21: Summary of Percent Reduction in Emissions of Target Compounds After Cover Application.

Target Compound	Site 1	Site 3	Site 1	Site 3	Site 1	Site 3	Site 1	Site 3	Site 1	Site 3
	Period After Cover Application									
	1 Day (July 24)		2 Days (July 25)		1 Week (July 31)		2 Weeks (Aug. 7)		3 Weeks (Aug. 14)	
Acetone	89.2	57.3	69.1	76.8	58.3	24.7	84.4	58.4	96.9	67.2
Benzene	74.9	100	59.9	80.7	49.8	-188.5	84.9	79.1	90.0	83.3
1-Butanol	68.6	41.5	56.1	76.8	56.1	-36.6	81.2	86.1	99.9	80.5
Butanediol	73.5	99.4	99.9	53.5	73.5	99.9	99.9	99.9	99.9	99.9
2-Butanol	NA	79.1	NA	96.1	NA	87.5	NA	70.7	NA	35.2
Butanal	100	NA	83.3	99.9	99.9	-8.7	99.9	99.9	99.9	58.2
Chlorobenzene	100	NA	49.8	76.8	99.9	99.9	99.9	99.9	99.9	99.9
Cyclohexane	100	100	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
Ethyl Benzene	95.7	94.0	96.5	95.4	66.3	97.0	88.8	95.0	99.1	98.0
Heptane	NA	100	NA	99.9	NA	99.9	NA	99.9	NA	99.9
Methyl Ethyl Ketone	-33.8	53.7	83.3	99.1	-410.1	97.1	-58.9	44.0	58.2	47.9
2-Methyl Hexane	NA	100	NA	99.9	NA	99.9	NA	99.9	NA	99.9
3-Methyl Hexane	100	100	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
Methyl Isobutyl Ketone	90.6	88.7	84.3	87.3	53.0	82.2	82.8	86.2	93.7	90.0
Methyl Pentanone	99.9	NA	95.3	NA	99.9	NA	99.9	NA	99.9	NA
o-Xylene	100	NA	99.9	NA	99.9	NA	99.9	NA	99.9	NA
m & p-Xylene	98.0	97.3	97.4	96.8	80.0	97.6	92.3	95.4	99.9	98.9
Propanal	NA	99.9	NA	99.9	NA	99.9	NA	99.9	NA	99.9
Styrene	97.1	95.8	97.1	99.9	77.2	99.9	94.7	99.9	99.9	98.6
Tetrachlorethylene	100	97.4	99.9	95.5	41.5	96.3	66.6	94.0	99.9	99.9
1,3,5-Trimethyl Benzene	100	95.4	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
1,2,4-Trimethyl Benzene	100	49.8	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
1,2,3-Trimethyl Benzene	100	91.6	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
Toluene	95.6	94.6	95.6	94.1	70.2	94.6	82.3	89.2	98.5	96.9
Maximum Reduction (%)	100	100	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
Minimum Reduction (%)	-33.8	41.5	69.1	53.5	-410.1	-188.5	-58.9	44.0	58.2	35.2
Average Reduction (%)	87.5	86.8	84.9	92.2	55.7	70.3	84.9	90.8	96.7	88.8

The summary table shows that, for the two sites considered, over the 21-day study period, the average emission reduction ranged from 88.8 and 96.7 %. The effectiveness is slightly less for some of the more volatile species (e.g., acetone), where the emission reduction was more variable. However, this may be due to sampling artifacts other than actual variations in the effectiveness of the cover. Figures 3 and 4 show the emission rates for four select compounds; acetone, m&p-xylene, styrene and toluene, at Sites 1 and 3, respectively, over the 21-day sampling period. The emission rates were lowest immediately after the Posi-Shell was applied. By Day 2, (post-cover).

the emissions had generally increased, but a steady reduction was found in emissions over the next 3 weeks at Site 1. The findings were similar at Site 3 however, there was slightly more variability for some of the select compounds. The figures clearly show an overall reduction in emission rates over the study period particularly after the cover material had the opportunity to cure. Therefore, it appears that, during the 21-day period of this study, the Posi-Shell cover material appeared to be an effective barrier, reducing airborne emissions from the stored waste.

4. CONCLUSIONS

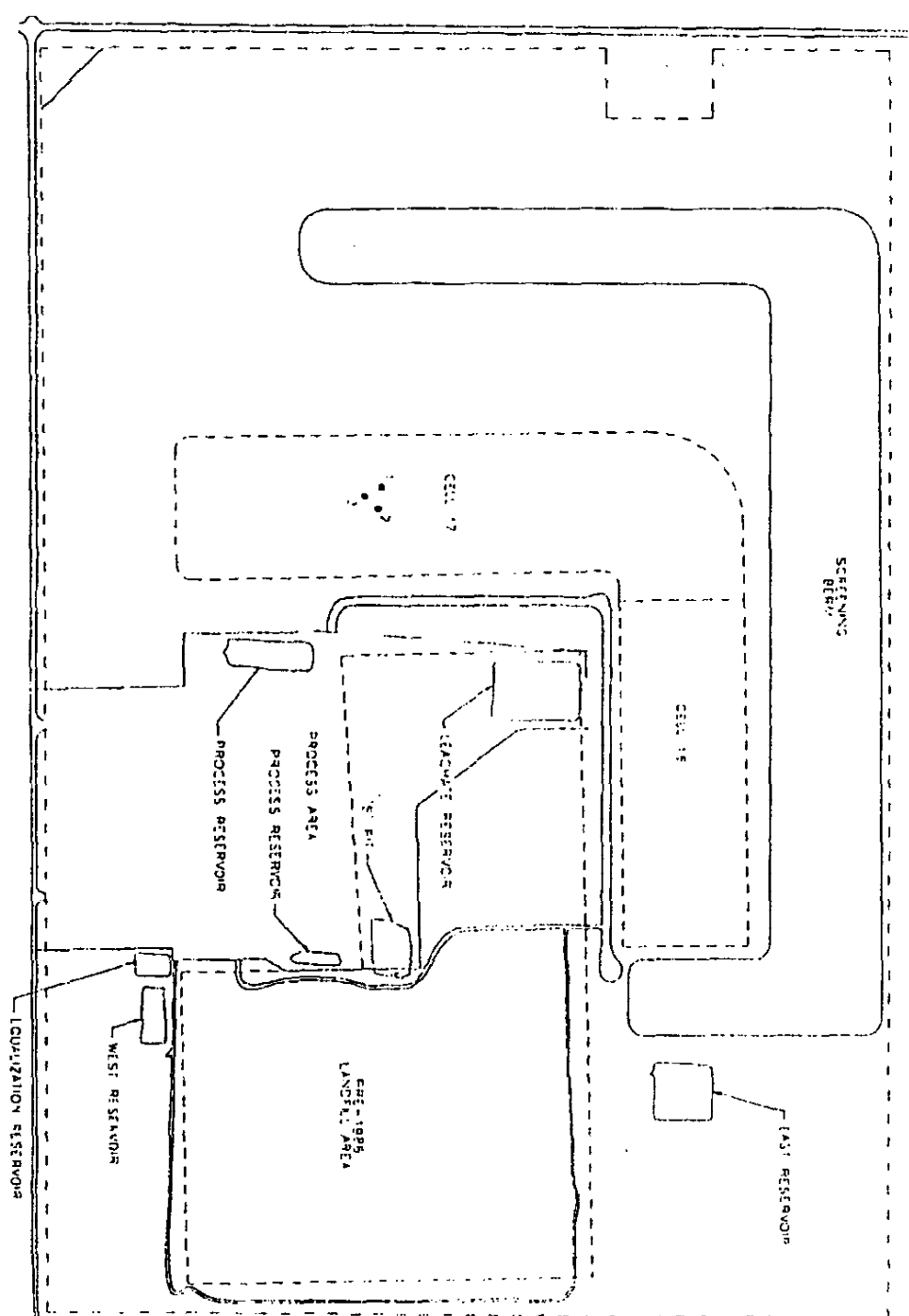
RWDI performed an assessment of a cover application material called Posi-Shell to reduce air emissions of volatile organic compounds, aldehydes, ketones and alcohols from the exposed waste at Laidlaw's Corunna Facility. The study involved sampling the emissions of target compounds from the pit face using an isolation flux chamber. Three sample positions were studied.

The results indicated that, over the 21-day study period, emissions of the target compounds from the two sites at the pit face were reduced by about 89 to 97%. Anomalous findings were encountered at the second location which appeared to be related to a chemical reaction with the waste that may have changed the binding characteristics of the Posi-Shell. With minor exceptions, the cover appeared to form a resilient surface, free from major cracks, after curing. When properly applied, the cover application was demonstrated to be an effective cover material, capable of dramatically reducing emissions for the target compounds.

5. REFERENCES

1. Fax transmittal from Mr. Blake Nesbitt, Laidlaw Environmental Services, to Mr. David Chadder, RWDI on July 15, 1997.
2. Reinhart, D. R., D. C. Cooper and B. L. Walker. 1992. "Flux Chamber Design and Operation for the Measurement of Solid Waste Landfill Gas Emission Rates". Journal of Air and Waste Management Association. 42:1067-70.

②



Flux Chamber Sample Locations

Laidlaw Cover Application - Cornwall, Ontario

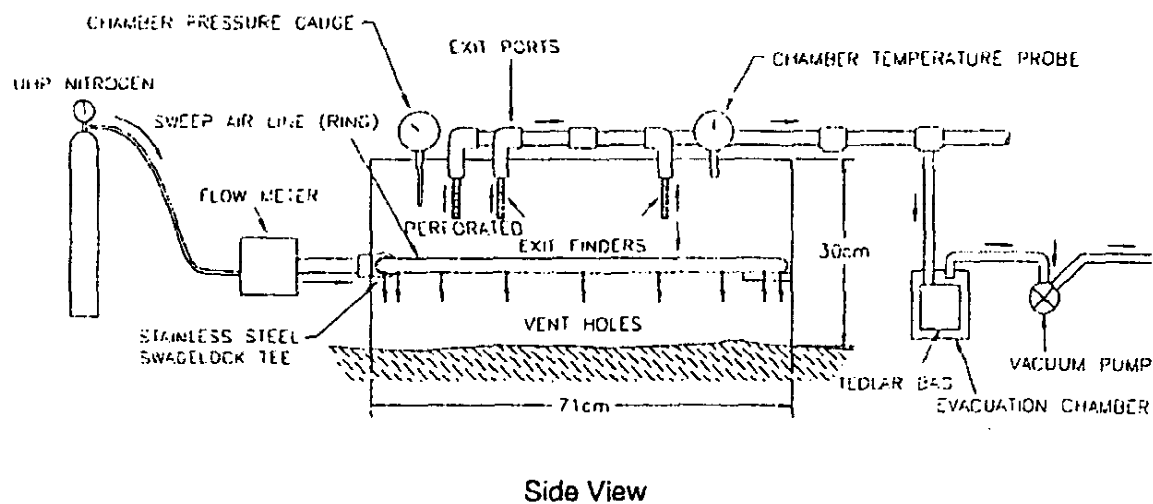
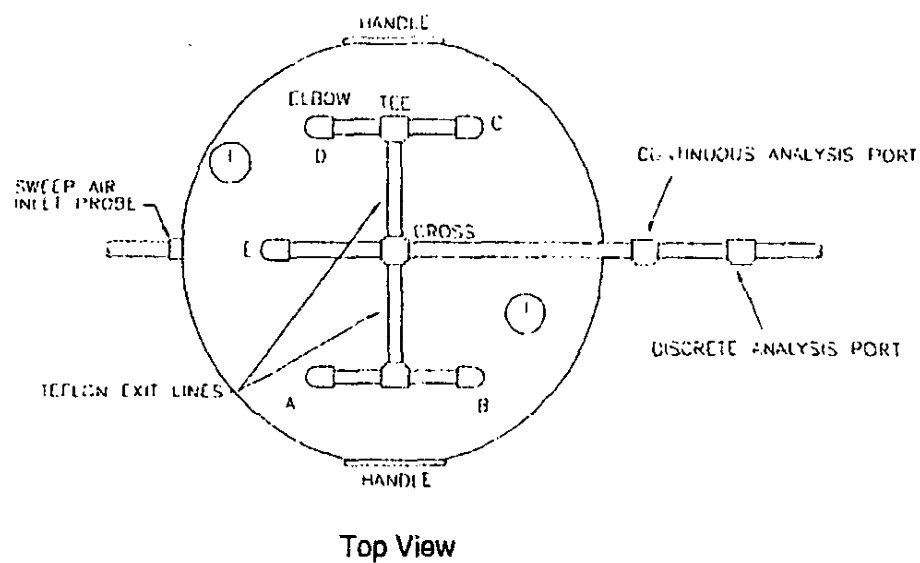
Job No. 97-411

Drawn by: SML
Figs: 1

Scale: Approx. 1:7,000

Date: Oct. 30, 1997

RWDI



Schematic Drawing
Flux Chamber Sampling Assembly

Laidlaw Cover Application - Corunna, Ontario

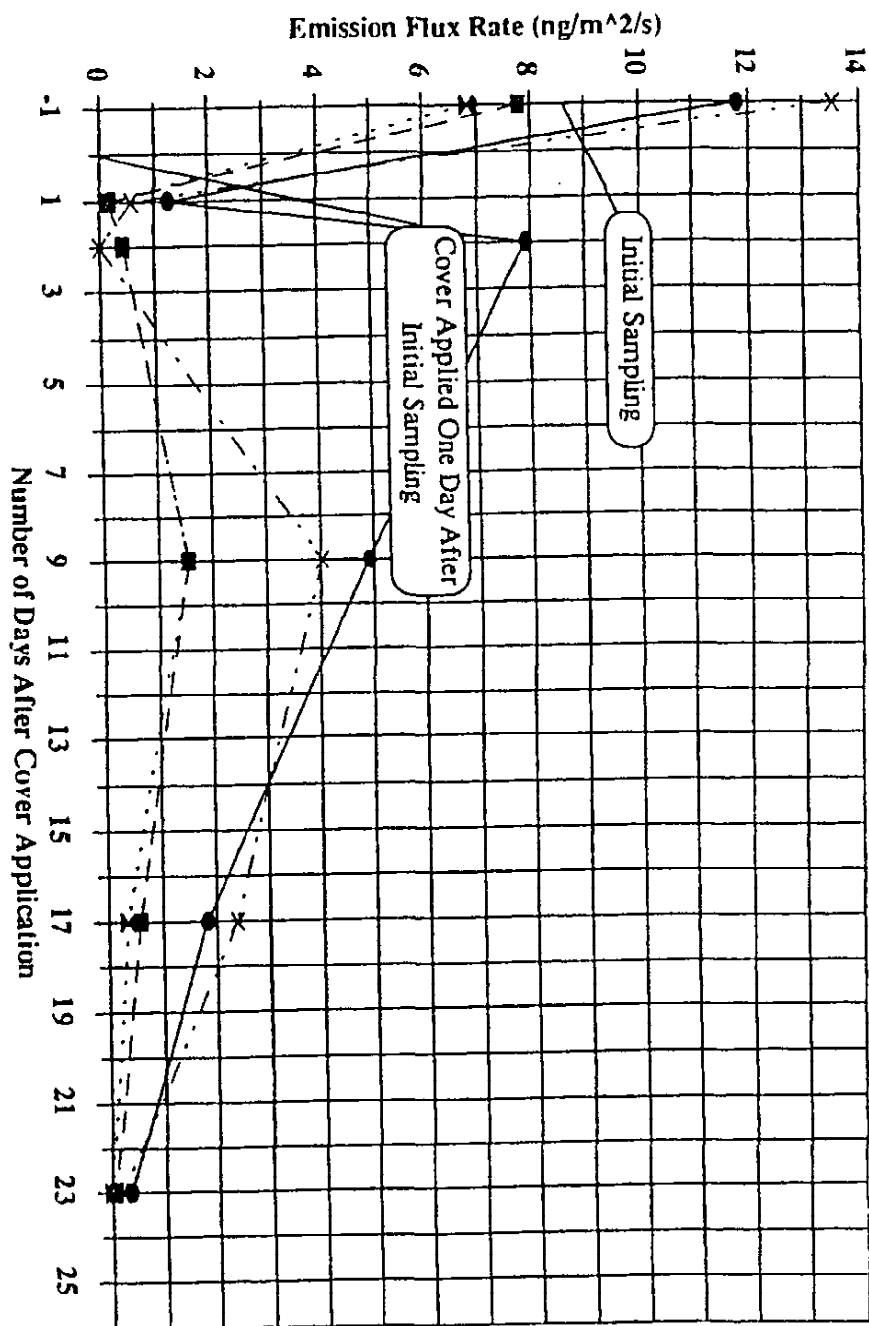
Job No. 97-411

Drawn by: SML Figure: 2

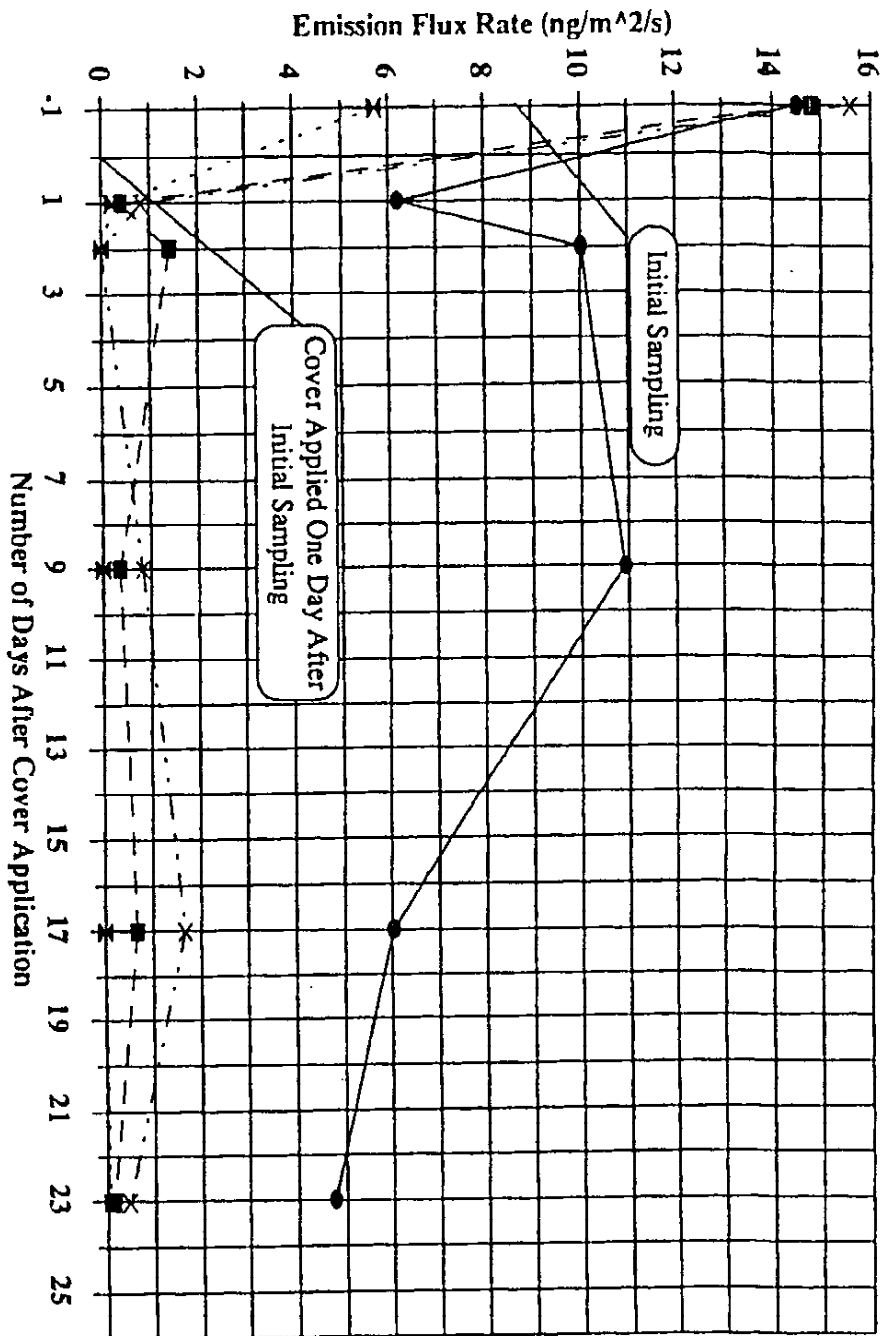
Scale: N.T.S.

Date: Oct. 29, 1997

RWDI



Emission Flux Rates for Select Compounds - Site 1		Figure: 3
Laidlaw Cover Application - Conuna, Ontario		Date: Oct. 30, 1997
Job No. 97-411		RWDI



Emission Flux Rates for Select Compounds - Site 3

Latitude Cover Application - Conuna, Ontario

Job No. 87-411

Figure: 4

Date: Oct. 30, 1997

RWDI

SOLID WASTE ANALYSIS AND MANAGEMENT

1.0 INTRODUCTION

~~TransAmerican Waste Industries, Inc. (TWI)~~ IESI will adopt the following Solid Waste Analysis and Management Plan (SWAMP) which specifies procedures to be used to analyze and manage the movement of nonhazardous industrial solid waste and other special waste received at the Sabine Landfill. Methods to be used in determining the identity of each waste managed are described in this SWAMP. A system of management controls is provided to ensure that only permitted waste, including solid waste from residential, commercial, and industrial sources pursuant to the definitions and restrictions established by the Louisiana Administrative Code LAC 33:V11.115 and 33:V11.711.D.1, will be disposed of at the landfill. Regulatory exempt wastes which are properly manifested will not be subject to the site controls implemented by this SWAMP.

In the event that state or federal rules which provide specific procedures to sample, analyze, and manage the movement of nonhazardous industrial solid waste and other special waste received at landfills are promulgated, appropriate sections of this SWAMP will be automatically superseded by the rules as they are promulgated.

2.0 CONTROL OF INCOMING WASTE

Incoming waste is controlled to prevent the facility from receiving waste materials which would violate landfill permits or management policies. In addition, rules for waste disposal and prohibited waste are conspicuously displayed on sign(s) at the site entrance. ~~TW~~ IESI will require all transporters/generators of non-hazardous industrial solid waste (except waste which is regulatory exempt) to provide waste characterization information. ~~TW~~ IESI has a multi-tier system for controlling waste arriving at the site. The first tier includes appropriately trained customer sales persons who work closely with generators to check that only permitted waste are sent to the site.

The second tier level for controlling incoming waste is provided by the scale masterattendant at the site entrance. The scale masterattendant has been instructed on what to look for in incoming waste loads that may indicate a shipment of prohibited waste material. As each waste vehicle arrives at the site entrance, the scale masterattendant visually observes the waste vehicle to check if there are any obvious signs that the waste load is a prohibited waste. If the scale masterattendant suspects that a shipment contains prohibited waste, the shipment will be directed to the holdingsampling area for further review or it will not be accepted. If the Scale masterattendant suspects that a shipment contains prohibited waste, the Louisiana Department of Environmental Quality (LDEQ) and Director of the Landfill Manger Operations will be notified. The Landfill Manager will determine what further notifications are necessary.

The scale master attendant ~~may~~ will direct shipments of nonhazardous industrial and other special waste, which have appropriate manifest documentation (See Section 35.0), to the inspection area, ~~if necessary~~ for inspection and/or sampling of the waste shipment. All other waste will be directed to the working face of the landfill.

The third tier level for controlling incoming waste occurs at the working face of the landfill. ~~TWHE~~ESI personnel have been instructed as to the general appearance and characteristics of many types of prohibited waste. As waste unloading operations are observed and the waste is spread and compacted, landfill personnel will be alert to the potential presence of prohibited waste. If prohibited waste is observed or suspected, landfill personnel will isolate the material, if possible, and prevent its inclusion into the landfill. Even if the material is inadvertently mixed with waste on the working face, procedures will be implemented to extract that material from the landfill for safe disposal elsewhere.

Nonhazardous industrial waste ~~may~~ is also be subjected to random inspection and testing in the waste inspection area (tier 4). ~~As part of the testing, described in Section 5.2, the QA/QC technician conducting and documenting the inspection will~~ be alert to the potential presence of prohibited waste.

Once a suspected prohibited waste has been isolated and secured, the Landfill Manager ~~District Director and LDEQ~~ will be notified to determine the proper regulatory and environmentally safe course of action to be taken.

The fourth tier level of controlling incoming waste is through random inspection of incoming loads. Random inspection will ~~involve two universes~~ involve two classifications of disposal loads, the loads brought in by commercial haulers and the loads brought in by individual residents and businesses. On loads from commercial haulers, ~~TWHE~~ESI will select a minimum of one load per week on a random basis for close inspection of the load. The selected load will be dumped near the working face but apart from the other loads received that day. The area near the working face will be an additionally lined area consisting of at least 1 foot of Interim Cover and sufficient berms to contain a full load until inspection can be completed. The load will be spread to about two feet thick high. Landfill personnel will then manually sort through the load checking for prohibited wastes. If any prohibited wastes are found, the hauler will be contacted and will be required to pick up the prohibited waste. If necessary, due to contamination, the hauler will be required to pick up the entire load. All information will be recorded in the daily log and on the inspection sheet.

~~On loads brought in by individual residents and business,~~ ~~TWHE~~ESI will select a minimum of one load per day, from a residential or business delivery, on a random basis for close inspection. Since these loads are generally unloaded by hand, either at the work face or at the public ramp, the inspection will be performed by having one of our personnel closely watch the unloading of the load. Any prohibited items will be rejected and not be allowed to be unloaded, and This action will be noted on the random inspection sheet and the daily log.

All operating personnel will receive training in screening for hazardous waste.

Sabine Parish Sanitary Landfill

TW4IESI will use either a course created in-house, obtained from Solid Waste Association of North America or from another suitable training course provider.

3.0 NONHAZARDOUS INDUSTRIAL WASTE CONTROL

Regulated hazardous wastes are not received by the facility for disposal. Hazardous wastes are waste defined as a hazardous waste in the current Louisiana Hazardous Waste Regulations (LAC 33V) and by the Federal government under the Resource Conservation and Recovery Act and subsequent amendments.

FWHESI will require all transporters/generators of nonhazardous industrial solid waste (except waste which is regulatory exempt) to provide waste characterization information.

Transporter/gGenerators will be required to complete a Request for Nonhazardous Industrial Waste Characterization Data (WCD) sheet or other equivalent profile sheet information form prior to disposing of waste in the landfill (See Figure 3-1 and 3-2). The transporter/generator will also be required to furnish a copy of the letter from LDEQ issuing an LDEQ waste code for the waste. Upon review of the submitted information, FWHESI will issue a disposal authorization and an FWHESI WCD waste code number.

Generators of nonhazardous industrial waste must provide FWHESI with a copy of all applicable transporter permits and registrations, and a mailing address, phone number, and transporter contact person. The transporter must also provide FWHESI with a list of client generators, contact names, and telephone numbers for all generators contributing to the shipment. This list must identify the source of the waste stream, supporting chemical analyses and/or a Material Safety Data Sheets (MSDS), and the LDEQ Solid Waste Division generator and transporter numbers, if appropriate. The transporter/generator must provide FWHESI with an estimate of the anticipated quantity, rate, and frequency disposed of by the transporter/generator at the landfill. Generator/transporter banking and business references may be requested to allow FWHESI to determine the financial responsibility of the generator/transporter.

Figure 3-1

~~REQUEST FOR NONHAZARDOUS INDUSTRIAL WASTE DISPOSAL~~~~Sabine Landfill~~~~TransAmerican Waste Industries, Inc. HES1~~

Applicant's Name: _____

Address: _____

Telephone: () _____

Relationship to Generator or Transporter: _____

Generator's Name: _____

Address: _____

Telephone: () _____

LDEQ Notification Number: _____

LDEQ Waste Code Number/Name: _____

Transporter's Name: _____

ICC Permit No.: _____

Address: _____

Telephone: () _____

Request is hereby made to dispose of Non-hazardous Industrial Solid Waste as defined by LAC 33:V11.115. The waste is described on the waste characterization form and analysis report which are made a part of this application. The waste is not hazardous as defined by the LAC 33:V or the Environmental Protection Agency in 40 CFR 261.1 through 261.33.

Signature_____
Title_____
Date

Figure 3-12
(Page 1 of 3)

**NONHAZARDOUS INDUSTRIAL WASTE
CHARACTERIZATION INFORMATION**

Sabine Landfill

~~TransAmerican-Waste-Industries, Inc.~~ IESI

Waste Code No. (to be completed by ~~TransAmerican-Waste-Industries, Inc.~~ IESI)

General Instructions: A determination of the acceptability of your waste material for disposal at our site will be made based upon information obtained on this form and required attachments. Please answer all questions accurately and completely. If your response is "none" or "not available," please so indicate. Answers must be printed in ink or typed. The form must be signed by a responsible representative of your firm having authority for determining ultimate deposition of the waste and directing payment thereof.

1. Generator Name: _____
 LDEQ Notification: _____
 LDEQ Waste Code Number/Name: _____
 EPA I.D. No.: _____
 Address: _____

 Authorized Representative: _____
 Title: _____
 Telephone Number: _____
 Billing Name: _____
 Address: _____

2. WASTE/WASTE STREAM NAME: _____

 EPA Hazardous Waste code(s) (40 CFR 26.21 through 261.33)

☐ Check if waste is NOT hazardous per RCRA
☐ Check if waste is EXEMPT per 40 CFR 261.4
 Describe process generating waste:
 Describe appearance:
 Is the waste state SOLID per RCRA? _____ Yes _____ No
 Estimated quantity: ___ lbs. ___ tons ___ cu. yd. ___ drums ___ gallons

Figure 3-12
(Page 2 of 3)

3. **WASTE PROPERTIES:**

(☐) Complete TCLP Report attached.

A. Vapor pressure mm Hg at 25oC: _____

B. Flash Point: _____ oF _____ oC Closed cup _____ Open cup _____

C. Phases/layers: _____ Single _____ Bi-layered _____ Multi-Layered

Check Box if waste ignites when exposed to:

(☐) Air { ☐ } Water { ☐ } Friction

D. Physical state at 20oC: _____ Solid _____ Liquid _____ Semi-solid _____ Powder

E. Corrosivity: Is waste corrosive per 40 CFR 261.22?: _____ Yes _____ No

F. pH: _____

G. Solubility (g/100 gH₂O at 20oC): _____

H. Density: _____ lbs./cu. ft. _____ lbs./gal. _____ lbs./55-gal. drum

I. Odor: _____ Strong _____ Mild _____ None

Describe Odor: _____

J. Reactivity:

Hydrophoric Yes _____ No _____

Phyrophoric Yes _____ No _____

Autopolymerizable Yes _____ No _____

Thermally sensitive Yes _____ No _____

Shock Sensitive Yes _____ No _____

Explosive Yes _____ No _____

K. TCLP: Is this waste defined as hazardous according to

TCLP (40 CFR 261.24)?: _____ Yes _____ No

4. **COMPONENTS:**

Specific chemical names of components are required. DO NOT use generic names.

Account for 100 percent of the waste. Attach additional pages if necessary.

Component.	Average or Sample Result	Range
_____	_____	_____%-_____%
_____	_____	_____%-_____%
_____	_____	_____%-_____%
_____	_____	_____%-_____%

Analytical Techniques: _____

(☐) See complete analytical results.

Figure 3-12**(Page 3 of 3)**

This waste contains:

Biological Materials	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Radioactive Materials	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Pathogens	<input type="checkbox"/> Yes	<input type="checkbox"/> No
PCB's	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Etiological Agents	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Dioxin	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Asbestos	<input type="checkbox"/> Yes	<input type="checkbox"/> No

If yes, specify type and concentration:

5. Required personal protective equipment and procedures:
- _____

6. WASTE TRANSPORTER:

Name: _____

Address: _____

Telephone: () _____

ICC Permit No.: _____

Contact Person: _____

Proposed Shipping Method: Drums ☐ Bulk ☐ Other ☐

Describe: _____

Is certificate of insurance attached?: ☐ Yes ☐ No

7. Generator

Authorized Signature: _____

Title: _____

Date: _____

8. SUBMITTALS:

Representative one quart sample(s) must be submitted with request.

Copies of Material Safety Data Sheets (OSHA form 20).

Laboratory analysis of waste.

Signed statement from laboratory certifying that waste is not hazardous as defined in 40 CFR 261.21 through 261.33.

9. Please submit the required information to the following address:

Sabine Parish Landfill

~~TransAmerican Waste Industries, Inc.~~ IESI

P.O. Box 1329

955 Sabine Landfill Rd.

Many, LA 71449 (318) 256-6363

Sabine Parish Sanitary Landfill

Waste characterization conducted by the generator may include waste sampling and analysis on a current waste sample, a review of generator's past waste sampling results, a review of generator's thorough knowledge and understanding of the waste and its generation process or other documented waste characterization information sources such as MSDS.

Waste sampling and analysis performed by the generator must be performed in accordance with Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA Publication SW-846 (SW-846). Waste sampling and analysis characterization information prepared by the generator and furnished for TWHESI's review must be performed by a certified independent laboratory and must include a description of the sampling procedures.

Following TWHESI's review of the waste characterization information, the generator/applicant will be provided with a copy of the WCD, documenting approval or denial of the waste disposal request notified, in writing, concerning the acceptance or refusal of the waste (see Figure 33). The approval of the WCD ~~An issuance of an authorization letter~~ is not an absolute grant of the right to dispose of waste at the facility. TWHESI will suspend or withdraw authorization for disposal from any generator or their transporter not following applicable Louisiana, federal, and TWHESI rules or which adversely impact operations at the landfill.

A copy of the waste characterization information and LDEQ waste code number ~~notification letter~~ for each waste stream accepted at the site for disposal will be maintained at the site for each waste accepted. The waste sampling and analysis ~~This information identified above may~~ will include of the corrosivity, reactivity, ignitability, and Toxicity Characteristic Leaching Procedure (TCLP) analytical data. The waste characterization information will also contain a description of the waste and, the process generating the waste, and ~~the waste sampling procedure, as well as certification from the generator that the waste is not a listed or characteristic hazardous waste.~~

Generators will be required to furnish waste characterization information prior to acceptance of the original waste stream and annual waste characterization updates for each repetitive waste stream, ~~including supporting analytical data information.~~

Sabine Parish Sanitary Landfill

Figure 3-3

APPROVAL FOR DISPOSAL

SABINE LANDFILL

TRANSAMERICAN WASTE INDUSTRIES, INC. IESITM Waste Code No. _____ (to be completed by TW IESI)

LDEQ Notification Number _____

LDEQ Waste Code Number/Name _____

To: _____ Date: _____

Your Request for Disposal No. _____ dated _____
 with accompanying Waste Characterization Information has been reviewed and the waste has
 been approved for disposal at our landfill site in accordance with the following:

Quantity: _____ Estimated Delivery Date: _____

Special Handling: _____

Please telephone our district manager at _____ 24 hours in advance of the expected time
 of arrival at the site to verify your shipment. If such notification is not made, the waste may
 not be admitted for disposal. Additionally, all shipments of our firm's solid waste must be
 accompanied by a properly executed uniform waste manifest document.

On behalf of TW IESI, let me thank you for selecting our site for the disposal of your firm's
 waste.

Sincerely,

TransAmerican Waste Industries, Inc. IESI

District Manager
 West Louisiana District

For the purposes of this SWAMP, a waste stream is a series of waste loads for which the generator indicates on the waste manifest the same WCD waste code number assigned by FWHESI. Whenever a process change occurs, waste characterization information will be obtained prior to acceptance of the waste stream.

4.0 – QA/QC PLAN FOR SOLIDIFICATION

This landfill will utilize a solidification program to process liquid waste prior to disposal within the landfill in accordance with landfill procedures.

Only waste that meets the standards described by the paint filter test will be disposed of without solidification. This solidification program is applicable to all industrial, commercial, and residential wastes authorized by this permit and the Louisiana Solid Waste Rules and Regulations. Additionally, in accordance with LAC 33:VII.521.H.2.a., the solidification program is available for acceptance of industrial waste, domestic-sewage sludge, incinerator ash, non-hazardous petroleum-contaminated media or, debris generated from underground storage tanks (UST) corrective action, or other special wastes as authorized by the administrative authority. For the purposes of this program, wastes will be categorized as either being a solid or liquid. Liquid wastes are those wastes meeting the definition established by LAC33:VII.115: "Liquid Waste: any waste material that is determined to contain "free liquids" as defined by Method 9095 (Paint Filter Liquids Test), and described in "Test Method of Evaluation Solid Wastes, Physical/Chemical Methods" (EPA Pub. No. SW-846)." All future updates or revisions to Paint Filter Liquids Test are incorporated into this program by reference. Solid industrial wastes may be landfilled directly. For those wastes that odor problems may arise, the facility will immediately compact and cover the waste with interim or daily cover.

Wastes that fail the paint filter test (i.e. contain free liquids) must be treated, solidified or processed in some manner (either on or off-site), such that it will pass the paint filter test, and then be disposed at the landfill.

Note: All waste from the above list that you wish to accept must be noted in 521.H.1.a, the procedure for each type of waste must be specified in 521.H.1.b, and then each one of these wastestreams must be addressed separately the QA/QC section.

Waste identified prior to acceptance through procedures outlined in the "Solid Waste Analysis and Management Plan," Appendix 14, as non-hazardous but containing free liquids will be solidified on-site prior to disposal in the landfill. The solidification process will be performed in portable solidification basins located within the certified and lined active disposal area. The placement of the basins within certified disposal areas allow direct unloading procedures to take place within a lined area. Additionally, the solidification agents will be placed directly into the basin from portable tanks, trucks, hoses or equivalent methods. Any wastes

Sabine Parish Sanitary Landfill

that require improvement in their physical characteristics for ease in handling or to pass the Paint Filter test may be mixed with a non-hazardous solidification agent.

Facility personnel will visually inspect all other incoming loads of pre-approved authorized liquid wastes. Additionally, wastes will be inspected on arrival and wastes that are observed to contain free liquids will be held for verification and acceptability during the acceptance procedures.

Facility personnel may perform the site screening procedures identified in Part II, Method 9095 (Paint Filter Liquids test) as part of the screening/acceptance procedures. Wastes that fail the paint filter test will be subject to the solidification process listed below:

- A. Facility personnel will estimate the approximate solidification ratio based on bench tests of the actual waste or based on past solidification ratios used to successfully achieve a passing result.
- B. Once an approximate solidification ratio (solidification material: waste) has been determined, the driver will be directed to proceed to the solidification basin for unloading. Multiple loads of different wastes may be placed in the basin at the same time prior to the solidification process provided they have been determined to be compatible with each other and have a common solidifying agent.
- C. Either prior to or after the load has been emptied into the solidification basin, a landfill equipment operator will place solidification material(s) into the basin. The solidification material(s) and liquid waste(s) will be mixed with a backhoe or equivalent equipment until the combined mixture will pass the paint filter test.
- D. The equipment operator will then contact the appropriate facility personnel to obtain a representative sample of the mixture and perform a paint filter test to ensure no free liquids are present.
- E. The solidification procedure is repeated until the solidified material passes the paint filter test.
- F. Upon determining no free liquids are present, the solidified waste will be documented and will be disposed of in the landfill in accordance with landfill procedures.

This Quality Assurance/Control Plan for Solidification allows for safe and efficient use of Sabine Landfill as an environmentally sound disposal site for all types of authorized industrial, commercial, and residential wastes which contain free liquids.

5.0 REGULATED ASBESTOS WASTE CONTROL

TWHESI will require transporters/generators to provide a valid or correct State of Louisiana Asbestos Disposal Verification Form (ADVF) similar to the form provided in Figure 54-14, for regulated asbestos waste when applicable. Only valid and completed ADVF's will be submitted to the agency within 30 working days for recognition from the Air Permits Division as required by LAC 33:III.5151. Generators of regulated asbestos waste must provide TWHESI with a copy of all applicable transporter permits and registrations, mailing address, phone number, and transporter contact person. The transporter must also provide TWHESI with a list of client generators, contact names, and telephone numbers for all generators contributing to the shipment. This list must identify the source of the waste stream and the LDEQ Solid Waste Division generator and transporter number. The generator/transporter must provide TWHESI with an estimate of the anticipated quantity, rate, and frequency of disposal by the generator/transporter at the landfill. Transporter/Generator banking and business references may be requested to allow TWHESI to determine the financial responsibility of the transporter/generator.

56.0 INCINERATOR ASH AND SLUDGE WASTE CONTROL

TWHESI will require a transporter/generators to provide waste characterization for all incinerator ash, UST waste, and sludges prior to the arrival at the site.

In accordance with LAC 33:VII.713.D.3.e, the waste characterization for Incinerator Ash and Sludge Waste shall be performed by the generator, as required by LAC 33:V.1103, prior to the acceptance of the solid waste by the facility. This will be done annually for two years following its initial acceptance. Thereafter, the generator shall certify that the waste remains unchanged.

~~Waste characterization for incinerator ash will include TCLP metal constituents analyses, and testing for dioxins. Annual/Quarterly waste characterization verification testing will be performed for all parameters except for dioxins, which will be tested for annually.~~

~~Waste characterization for sludges will include initial annual TCLP metal constituents analyses. The generator will conduct, and testing for priority pollutants for two years and every third year thereafter, and the generator will certify that the waste has not changed (LAC 33:VII.711.D.3.d.i).~~

Following TWHESI's review of the characterization information, the transporter/generator will be notified, in writing, of the approval or denial/acceptance or refusal of the incinerator ash or sludge WCD at the site.

Figure 54-14
ASBESTOS DISPOSAL VERIFICATION FORM
SABINE PARISH LANDFILL
TRANSAMERICAN WASTE INDUSTRIES, INC. IESI

STATE OF LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY AIR QUALITY DIVISION P.O. Box 4409 Baton Rouge, Louisiana 708044096		ADV F NO. 89767-00 FACILITY CODE	
1) PROJECT LOCATION & MAILING ADDRESS-ZIP 2) PROJECT PHONE		3) ISSUE DATE 4) EXPIRATION DATE	
5) CONTRACTOR'S NAME & MAILING ADDRESS-ZIP 6) CONTRACTOR'S PHONE		7) PROJECT START DATE 8) PROJECT COMPLETION DATE	
9) OWNER'S NAME AND MAILING ADDRESS-ZIP 10) PROJECT PHONE		11) ESTIMATED ACM QUANTITY 12) DESIGNATED DISPOSAL SITE	
13) PRINTED/TYPED NAME		14) SIGNATURE	
OWNER/OPERATOR 15) WASTE TRANSPORTER	16) PROJECT NO. 1.	17) QUANTITY	18) DATE COMPLETED
19) DISPOSAL SITE	2.		
	3.		
20) DATE SHIPPED	4.		
21) PRINTED/TYPED NAME		22) SIGNATURE	
TRANSPORTER 23) DATE RECEIVED		24) DATE DELIVERED	
25) PRINTED/TYPED NAME		26) SIGNATURE	
LANDFILL			
27) QUANTITY RECEIVED		28) DATE BURIED	
29) PRINTED/TYPED NAME		30) SIGNATURE	
31) SPECIAL CONDITIONS OR COMMENTS			

67.0 WASTE STREAM EVALUATION

~~FWHIESI~~ will evaluate waste based on the independent laboratory certifications, and/or other data and information submitted in the waste characterization information. Waste streams will be evaluated regarding possible reaction with other waste already deposited in the landfill based on published technical guidance documents. If necessary, based on the review of technical guidance information, appropriate measures may be taken to segregate incompatible waste.

Waste determined to contain "free liquids" as defined by the U.S. Environmental Protection Agency (EPA) Method 9095 (Paint Filter Liquids Test) (EPA, 1986) will not be accepted for direct disposal at the landfill, without first being processed utilizing the solidification procedures identified in Section 3.1.

78.0 SITE MANAGEMENT OF NONHAZARDOUS INDUSTRIAL WASTE AND OTHER SPECIAL WASTE

78.1 Site Notifications

The waste transporter and/or generator ~~should~~ must notify the Landfill district m Manager by telephone at least 24 hours prior to delivery with the volume of waste to be disposed and the estimated date and time of waste delivery. The Landfill Mdistrict-manager will then inform the transporter of any specific site operational conditions that may hinder or preclude the landfill's receipt of the generator transporter's waste at the requested time. ~~FWHIESI~~ reserves the right to limit or prohibit acceptance of any nonhazardous industrial waste or other special waste due to site operational considerations.

78.2 Site Verification Of Nonhazardous Industrial Waste

Upon arrival at the landfill, the transporter must present the scale master attendant with an approved manifest and/or approved WCD. The manifest of WCD ~~waste control record on the manifest~~ shall include the following:

1. Name and EPA registration number, if appropriate, of transporter;
2. Name, address, and telephone number of the person or company generating the waste and the date collected;
3. Type and amount of waste collected or transported;
4. ~~FWHIESI~~ waste approval code or WCD number
5. Name of responsible person (driver) collecting, transporting, and depositing the waste;
6. Date and place the waste was deposited;
7. Identification (LDEQ permit number, if appropriate, location, and operator) of the generating facility;
8. Name and signature of facility representative acknowledging receipt of the waste and the amount of waste received; and
9. ~~LDEQ notification number; and~~

10. —LDEQ waste code number/name.

Industrial waste will not be accepted without a copy of the LDEQ letter issuing a waste code number and notification number.

When the proper documentation and payment of tipping fees have been received, TWI/ESI personnel shall direct the transporter to the waste sampling area where the Quality Assurance/Quality Control (QA/QC) technician will collect a 1-pint sample (see Figure 7-1 for sample jar label) from the vehicles at the frequencies specified in Table 7-1. Samples will be obtained in accordance with procedures described in Section 2 of "Characterization of Hazardous Waste Sites A Methods Manual: Volume II Available Sampling Methods", EPA Publication 600/4-84-076 (EPA 600/4-84-076). All sampling equipment will be decontaminated after sampling in general accordance with decontamination guidelines provided in Appendix E of EPA 600/4-84-076. All collected samples will be marked with date, generator, waste manifest number, waste code number, and transporter.

The QA/QC technician will analyze collected samples in accordance with the frequencies specified in Table 7-1. Table 7-1 indicates the analysis frequency based on the number of containers in the specific waste stream. As defined in this SWAMP, a container is a waste vehicle (for bulk shipments), or an individual drum or packages (for smaller shipments). Regardless of the size of the waste stream, detailed site testing will be performed for each container when the waste stream contains 20 or less containers. Subsequently, as the number of containers which comprise the waste stream increases, the testing frequency is decreased to 10 percent of all containers comprising the waste stream. When lab packs are received, 10 percent of the containers within the pack will also be sampled.

Figure 78-1
SAMPLE JAR LABEL FOR
REPRESENTATIVE SAMPLES OF
NONHAZARDOUS INDUSTRIAL WASTE
SABINE LANDFILL
TRANSAMERICAN WASTE INDUSTRIES, INC. IESI

Sabine Landfill	
Waste Sample	
Date _____	
Generator _____	
Grid Location—TransAmerican Waste Industries, Inc. IESI Waste Code No. _____	
LDEQ Notification Number _____	
LDEQ Waste Code Number/Name _____	
Transporter _____	pH _____ Flush _____ of _____
Reactivity _____	Radionetivity _____
Free Liquids _____	
Special Handling _____	

*Sabine Parish Sanitary Landfill***Table 78-1 Testing Frequencies of Nonhazardous Industrial Solid Waste, Sabine Landfill**

Parameter	Testing Frequency (Number of Containers Tested/ Number of Containers)	Cumulative Number in Containers in Waste Stream
pH	1/1 1/10	0 to 20 >20
Reactivity	1/1 1/10	0 to 20 >20
Flashpoint	1/1 1/10	0 to 20 >20
Radioactivity	1/1 1/10	0 to 20 >20
Free Liquids	1/1 1/10	0 to 20 >20

Source: HMA Environmental, Houston, Texas

Data compiled from this testing will be recorded on the Site Admittance Examination Form (see Figure 7-2). If based on visual inspection and the site testing, it appears that prohibited waste is being transported, TWHESI will refuse disposal until concerns about the waste characterization have been satisfied. If TWHESI denies disposal of a transporter's waste load, the Director of Landfill operations and LDEQ will be notified immediately and the waste will be returned to the generator.

After a review of the approved WCD and other paperwork accompanying the load and a visual observation of the waste has the sampling and testing procedures have been completed and if the nonhazardous industrial waste load is accepted for disposal, TWHESI personnel will direct the transporter to discharge the waste on the working face of the landfill. All waste samples shall be archived for a minimum of 1 year. Once the archived samples have reached their anniversary date of storage, they shall be disposed on the landfill working face.

78.3 Personnel Duties And Responsibilities

The Director of Landfill Manager Operations or his/her designee will be responsible for the review of the Request for Nonhazardous Industrial Waste Disposal and Industrial Waste Characterization Data (WCD) sheet and other waste characterization information provided by the waste's generator information forms. The scale attendant QA/QC technician will then be notified by the Director of Landfill Manager or his/her designee Operations indication that the waste is acceptable for disposal.

The QA/QC technician will also ensure that sampling the testing of the incoming wastes are accomplished to verify waste conformance with the description provided with the Request for Nonhazardous Industrial Waste Disposal and Industrial Waste Characterization Information forms. The scale attendant QA/QC technician will oversee the processing of the waste manifests and recording of waste receipt billings screening. The scale attendant QA/QC technician is also responsible for maintaining a record of site testing performed, waste receipt, and the disposal location.

The scale attendant QA/QC Technician may sign the waste manifest and observe the incoming waste to verify conformance with the certification. The scale master attendant will prevent the acceptance of any nonhazardous industrial waste or other special waste for which a Request for Nonhazardous Industrial Waste Disposal and Industrial Waste Characterization Data (WCD) sheet has information forms have not been submitted and an approval for disposal issued.

Equipment operators and other personnel involved in the actual waste processing will receive the training and instruction necessary for proper handling of the waste. Personnel will also receive instruction in the use and maintenance of any special equipment required.

Figure 78-2

**NONHAZARDOUS INDUSTRIAL WASTE SITE
ADMITTANCE EXAMINATION**

**~~S A B I N E L A N D F I L L~~
TRANSAMERICAN WASTE INDUSTRIES, INC.**

TransAmerican Waste Industries, Inc. Waste Code No. _____

Date: _____ Military Time: _____

Transporter: _____

ICC Permit No. _____

Generator: _____

LDEQ Notification Number: _____

LDEQ Waste Code Number/Name: _____

Approximate Volume of Shipment _____ (gal) (ft³) (yd³) (ton)

Liquid _____ Solid _____ Semi-liquid _____

Physical Appearance: _____

Odor: _____

pH: _____

Flashpoint: _____ o(F) (C) (Close) (Open) Cup

Reactivity: _____

Radionactivity: _____

Free Liquids: _____

Sample Collected: _____

Signed: _____

78.4 SITE PREPARATION

The Landfill Managerforeman will determine if adequate disposal volume and location are available to accommodate incoming waste. If not, preparations will be made under the Landfill ManagerForeman's direction prior to acceptance of the waste. The requested 24-hour advance notice of waste delivery will be directed to the Landfill Managerforeman or designee. The delivery arrangements will be evaluated to determine compatibility with landfill operations and ensure that the waste can be properly handled upon receipt. Any special provisions (e.g. site preparation) must be completed prior to delivery of the waste to the site. The Landfill Managerforeman is responsible for preparation of disposal cell prior to arrival of the waste and proper filling and covering of the waste.

78.4.1 NONHAZARDOUS INDUSTRIAL WASTE

Only permitted waste will be received at the landfill; NO HAZARDOUS WASTE OF ANY KIND SHALL BE DEPOSITED IN THE LANDFILL. Once received, permitted waste will be disposed on the working face of the landfill. The disposed waste will be covered daily.

78.4.2 TREATED INFECTIOUS WASTE

Treated infectious waste disposed of at the Sabine Landfill shall be disposed of in accordance with the Department of Health and Human Resources regulations.

78.4.3 WHITE GOODS/VEHICLES

No white goods or vehicles will be disposed of at the Sabine Landfill. All white goods and vehicles delivered to the site, including inoperative and discarded refrigerators, ranges, washers, water heaters, and other similar domestic and commercial appliances, will be stored in a unit separate from other solid waste and shall be removed every 30 days the designated area (shown in Exhibit #3) in rolloff containers until and shipped to a contracted recycler in accordance with LAC 711.D.5. The facility shall maintain a log of dates and volumes of white goods removed from the facility.

78.4.4 DEAD ANIMALS

Dead animals disposed of at the Sabine Landfill shall be disposed of in accordance with the Department of Health and Human Resources regulations.

78.4.5 INCINERATOR ASH AND SLUDGES

Incinerator ash and sludge from wastewater treatment works, water treatment plants, or their similar facilities may be disposed of at the landfill if the waste does not contain free liquids as determined by the Paint Filter Liquids Test (EPA, 1986).

Sabine Parish Sanitary Landfill

TWHESI will require transporters/generators to provide waste characterization for all incinerator ash and sludges prior to arrival at the site. Waste characterization will be required as described in Section 65.0.

Following TWHESI's review of the characterization information, the transporter/generator will be notified, in writing, of the approval or denial/acceptance or refusal of the incinerator ash or sludge WCD at the site.

78.4.6 TIRES

Waste tires received at the landfill will be temporarily stored in at the designated area in roll-offs (~~shown in Exhibit #3~~) until shipped to an approved waste tire collector.

78.4.7 REGULATED ASBESTOS-CONTAINING SOLID WASTE

Regulated aAsbestos will be handled in accordance with National Emission Standards for Hazardous Air Pollutants (NESHAPS) and the Louisiana Air Quality Regulations, LAC 33:III.5151 regulations. All landfill personnel working around friable asbestos will be clothed in disposable protective clothing (i.e. Tyvex) and will wear appropriate respirators. The protective clothing will be disposed of in the landfill cell when the friable asbestos landfilling operations are complete. Equipment operators must remain inside the sealed cabs of their equipment, or wear appropriate safety equipment, until friable asbestos landfilling operations are complete.

Scheduling of asbestos waste delivery to the landfill must be approved and coordinated by the landfill manager. Notification of the Landfill Mdistrict manager will be required, including approximate time of arrival and volume of asbestos material. Friable aAsbestos waste not properly bagged or containerized will not be accepted for disposal. The landfill's site operating conditions must be suitable to receive asbestos waste, as determined by the Landfill Mdistrict manager. Because friable asbestos waste poses a greater health risk to landfill personnel, it will not be accepted at the landfill without a proper manifest document.

Friable aAsbestos waste must be in a wetted condition and double bagged (at a minimum) in 6-mil plastic bags to prevent escape of the material to the outside air, and may not be stored onsite. Friable asbestos waste, when practical, shall be disposed of below grade. Should friable asbestos waste disposal be required in the above grade portions of the landfill, waste shall be buried at least 10 ft below the final elevation of the top of the landfill. Friable asbestos waste will be carefully unloaded and immediately covered with either 12 inches of clean soil or 3 ft of nonasbestos solid waste with a minimum of 6 inches of daily cover. Care shall be exercised in the application of cover so that bags will not be ruptured.

INDUSTRIAL WASTE LASALLE/GRANT LANDFILL

~~4-FR~~~~1-FR~~

METALS

1. ARSENIC	
2. BARIUM	<u>0.100</u>
3. CADMIUM	
4. CHROMIUM	<u>.511</u>
5. LEAD	<u>5.0</u>
6. MERCURY	<u>0.2</u>
7. SELENIUM	<u>1.0</u>
8. SILVER	<u>5.0</u>

VOLATILE ORGANIC COMPOUND

1. BENZENE	<u>0.500</u>
2. CARBON TETRACHLORIDE	<u>0.500</u>
3. CHLOROBENZENE	<u>104.2</u>
4. CHLOROFORM	
5. 1,4-DICHLOROBENZENE	<u>7.500</u>
6. 1,2-DICHLOROETHANE	<u>0.7108</u>
7. 1,1-DICHLOROETHYLENE	<u>0.200</u>
8. METHYLETHYL KETONE	<u>200.0</u>
9. 1,1,1,2-TETRACHLOROETHYLENE	<u>0.210</u>
10. TRICHLOROETHYLENE	<u>0.500</u>
11. VINYL CHLORIDE	<u>0.200</u>

ACID-PHENOLS

1. O-CRESOL	<u>200</u>
2. M-CRESOL	<u>2.09</u>
P-CRESOL	<u>200</u>
4. CRESOL	<u>200</u>
5. PENTACHLOROPHENOL	
6. 2,4,5-TRICHLOROPHENOL	<u>40</u>
7. 2,4,6-TRICHLOROPHENOL	

BASE-NEUTRALS

1.2,4-DINITROTOLUENE	0.13
2.1,4-HEXACHLOROBENZENE	51.13
3.1,1,1-TRICHLORO-2,2,4,4-TETRAFLUORO-5,5-DIBROMO-3-NITROBENZENE	0.50
4.1,1,1-TRICHLORO-2,2,4,4-TETRAFLUORO-5,5-DIBROMO-3-NITROBENZENE	11.42
5.1,1,1-TRICHLORO-2,2,4,4-TETRAFLUORO-5,5-DIBROMO-3-NITROBENZENE	2.11
6.PYRIDINE	5.00

PESTICIDES

1.1,1-DIBROMO-2,2,4,4-TETRAFLUORO-5,5-DIBROMO-3-NITROBENZENE	0.01
2.1,1-DIBROMO-2,2,4,4-TETRAFLUORO-5,5-DIBROMO-3-NITROBENZENE	0.40
3.1,1,1-TRICHLORO-2,2,4,4-TETRAFLUORO-5,5-DIBROMO-3-NITROBENZENE	
4.1,1,1-TRICHLORO-2,2,4,4-TETRAFLUORO-5,5-DIBROMO-3-NITROBENZENE	0.50
5.1,1,1-TRICHLORO-2,2,4,4-TETRAFLUORO-5,5-DIBROMO-3-NITROBENZENE	0.01
6.1,1,1-TRICHLORO-2,2,4,4-TETRAFLUORO-5,5-DIBROMO-3-NITROBENZENE	0.008

HERBICIDES

1.2,4-D	1
2.2,4,5-TRICHLORO-3-NITROBENZENE (SILVEX)	

****DD01=IGNITABILITY**

WASTE HAVE CHARACTERISTICS OF IGNITABILITY IF WASTE HAS FLASH POINT LESS THAN 140 DEGREES F.

****DD02=CORROSIVITY**

WASTE HAVE CHARACTERISTICS OF CORROSIVITY IF WASTE HAS PH LESS THAN OR EQUAL TO 2 OR GREATER THAN OR EQUAL TO 12.5. CORRODES STEEL AT A RATE OF 0.35MM PER YEAR

****DD03=REACTIVITY**

WASTE IS REACTIVE WHEN WASTE UNDERGOES VIOLENT CHANGE WITHOUT DETONATING. WASTE REACTS VIOLENTLY WITH WATER. IF CYANIDE OR SULFIDE BEARING WASTE, WHICH WHEN EXPOSED TO PH CONDITIONS BETWEEN 2 AND 12.5 PRODUCE TOXIC VAPORS OR FUMES.

APPENDIX 19
CONTINGENCY OPERATION PLAN

SABINE PARISH LANDFILL
OCTOBER 2006

1.0 INTRODUCTION

This Contingency Operation Plan describes actions to be taken by Sabine Landfill personnel in the event of accidents; fires; receipt of prohibited waste; environmentally significant release of waste or waste constituents to air, soil, surface, or groundwater; or equipment breakdowns. In the event of such situations, the appropriate provisions of this plan will be implemented immediately.

Actions described in this plan will be taken by landfill personnel in response to emergency situations. Qualified individuals will be designated as the Emergency Coordinator (landfill foreman) and alternates. The Emergency Coordinator and alternates shall be thoroughly familiar with all aspects of the contingency plan, operational activities of the landfill, characteristics of the landfill, and location of all landfill records. The emergency coordinator and alternates will be authorized to commit the resources necessary to implement contingency operations completely. All personnel are authorized to undertake the initial emergency response measures necessitated by an emergency.

The following emergency contacts are available to the landfill:

Ambulance	Many, LA	911 or (318)256-0968
Fire	Many-Zwolle, LA	911 or (318)256-9241
Hospital	Many, LA	(318)256-5691
Sheriff	Many, LA	(318)256-9241
Civil Defense	Many, LA	(318)256-5637
CLECO	Many, LA	(318)256-2078
LA Dept. of Environmental Quality (1-866-896-5337)		
	Solid Waste	(225)219-3070
	Air Quality	(225)219-3181
	Water Quality	(225)219-3181
	Hazardous Waste	(225)219-3181
LA Dept of Public Safety		
	Baton Rouge, LA	(225)925-6113
	Hazardous Materials Unit	(225)925-6595
	Troop A Headquarters	(225)295-8500
U.S. Weather	Baton Rouge, LA	(225)357-9743
U. S. Coast Guard	New Orleans, LA	(504)589-6198

Red Cross	Baton Rouge, LA	(225)291-4533
U.S. Environmental Protection Agency, Region VI	Dallas, TX	(214)655-6444
IESI LA Landfill Corporation Vice President		(817) 632-4000
Chemtrec		(800)424-8802

No special arrangements have been made with the local emergency service agencies because the potential incidents which may occur at the Sabine Landfill do not necessitate such arrangements. Incidents requiring outside emergency response agency assistance should be handled by conventional methods.

2.0 CONTINGENCY PLAN AMENDMENTS

Amendments to the contingency plan will be made by the emergency coordinator if, during the course of an emergency, the plan does not cover the required emergency procedures adequately. Amendments will be made to the plan when:

1. The plan is found to be deficient during an emergency;
2. Changes to the facility design, construction, operation, or maintenance affect this plan;
3. Personnel serving as emergency coordinator or alternates change.

3.0 ACCIDENTS

In the event of an emergency which threatens human health or the environment, the landfill foreman will immediately assess the severity and potential consequences of the incident. The following action(s) will be taken as deemed appropriate:

1. If the incident threatens human health or life, the emergency coordinator will evacuate personnel from the landfill in accordance with the evacuation plan shown on Figure 19-1.
2. Should the incident involve a spill or release which requires notification, the emergency coordinator will notify the appropriate federal or state agency affected by the release and report the following information:
 - a. caller's name and telephone number;
 - b. name and address of the facility;
 - c. time and type of release;
 - d. name and quantity of material(s) involved, to the extent known;